Acer Altos G510
Service Guide

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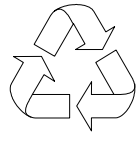

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PART NO.: VD.G51V7.001

PRINTED IN TAIWAN

Revision History

Please refer to the table below for the updates made on Acer Altos G510 service guide.

Date	Chapter	Updates

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Conventions

The following conventions are used in this manual

:

`Screen messages`	Denotes actual messages that appear on screen.
NOTE	Gives bits and pieces of additional information related to the current topic.
WARNING	Alerts you to any damage that might result from doing or not doing specific actions.
CAUTION	Gives precautionary measures to avoid possible hardware or software problems.
IMPORTANT	Reminds you to do specific actions relevant to the accomplishment of procedures.

Preface

Before using this information and the product it supports, please read the following general information.

1. This Service Guide provides you with all technical information relating to the BASIC CONFIGURATION decided for Acer's "global" product offering. To better fit local market requirements and enhance product competitiveness, your regional office MAY have decided to extend the functionality of a machine (e.g. add-on card, modem, or extra memory capability). These LOCALIZED FEATURES will NOT be covered in this generic service guide. In such cases, please contact your regional offices or the responsible personnel/channel to provide you with further technical details.
2. Please note WHEN ORDERING FRU PARTS, that you should check the most up-to-date information available on your regional web or channel. If, for whatever reason, a part number change is made, it will not be noted in the printed Service Guide. For ACER-AUTHORIZED SERVICE PROVIDERS, your Acer office may have a DIFFERENT part number code to those given in the FRU list of this printed Service Guide. You MUST use the list provided by your regional Acer office to order FRU parts for repair and service of customer machines.

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System Introduction

Features

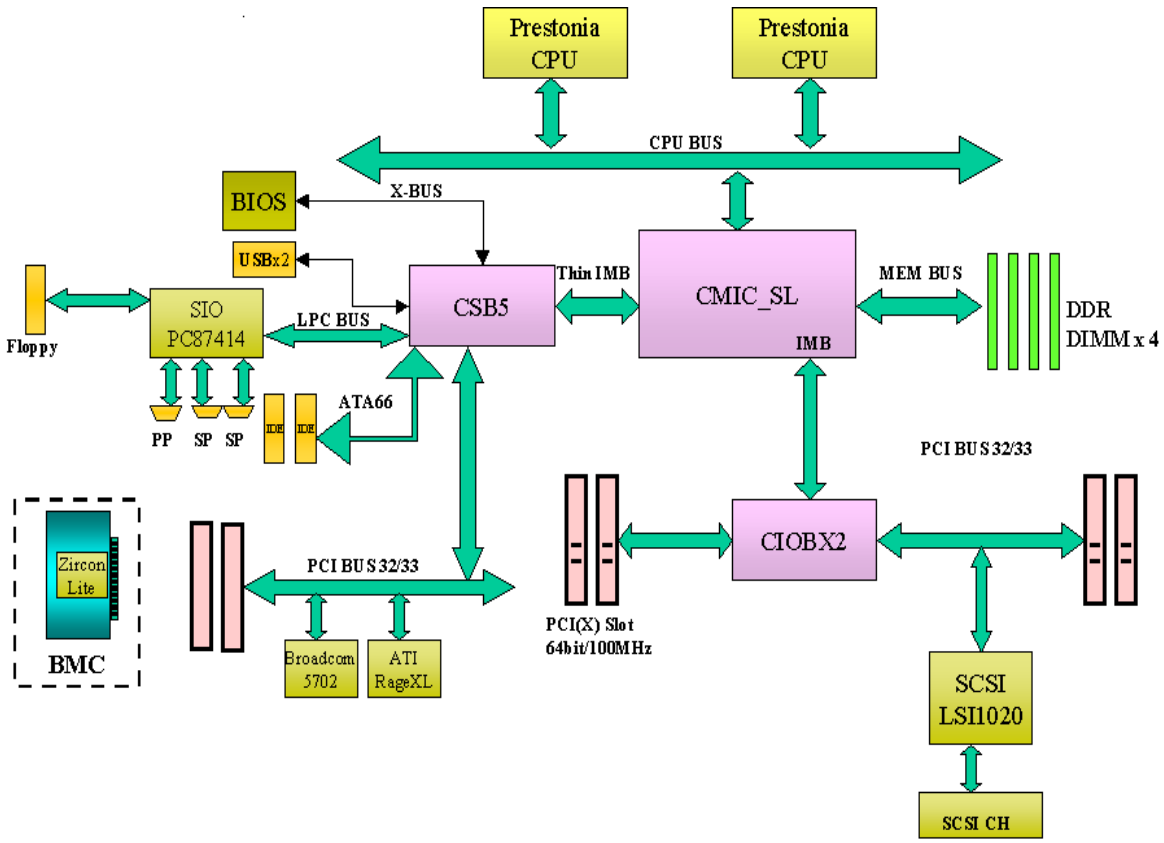
System

- **Processor**
  Dual Intel Xeon processor (PGA604 package) with FSB 400/533MHz.
- **Cache**
  Integrated 512K L2 cache per processor
- **Chipset**
  - North Bridge: ServerWorks CMIC-SL
  - South Bridge: ServerWorks CSB5
  - PCI-X Controller: ServerWorks CIOB-X2
- **System Bus**
  400/533 MHz system bus capability
- **System Memory**
  - DDR266 specification
  - 4DIMM slots
  - Up to 4GB memory support
  - 128MB/256MB/512MB/1GB Registered DDR200/266 SDRAM with ECC
- **I/O Expansion Slots**
  - Four 64bit PCI expansion slots (3.3V)
  - Two 32bit/33MHz expansion slots (5V)
- **Networking**
  Integrated 10/100/1000 Gigabit Ethernet
- **Graphics**
  ATI Rage XL Integrated with 8MB memory (32bit/33MHz PCI Interface)
- **Host Disk Controller**
  - 2-channel IDE controller (support for ATA 100 on Primary & Secondary IDE)
  - 1 channel Ultra320 SCSI Controller
- **Disk Storage**
  Maximum 876GB of SCSI disk storage (with six 146GB SCSI HDD installed)
- **Device Bays**
  - Two External 5.25” Bays
  - One Internal cage with 3*3.5 Bay
  - One externally accessible 3.5” floppy drive (pre-installed)
  - One externally accessible IDE CD-ROM drive (pre-installed)
- **Integrated I/O Interface**
  - One 25-pin parallel port
  - One 9-pin serial port
  - Two PS/2 port

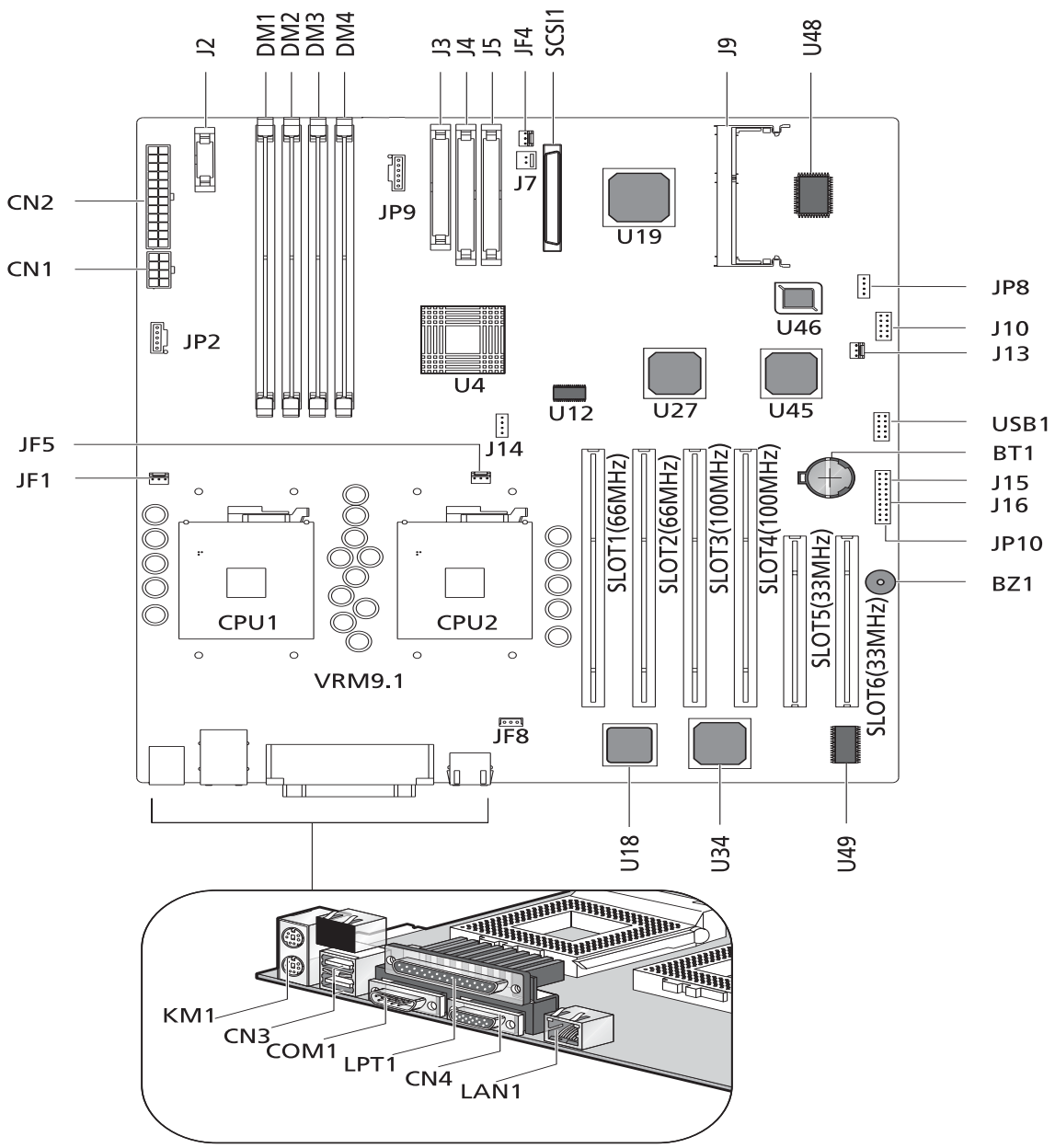
- One 9-pin video port
- One RJ-45 network port
- Two USB port

- **Power Supply**
  - 450W Single PFC Power Supply (basic SKU)
  - 450W 1+1 Redundant Power Supply (full SKU)

System Block Diagram



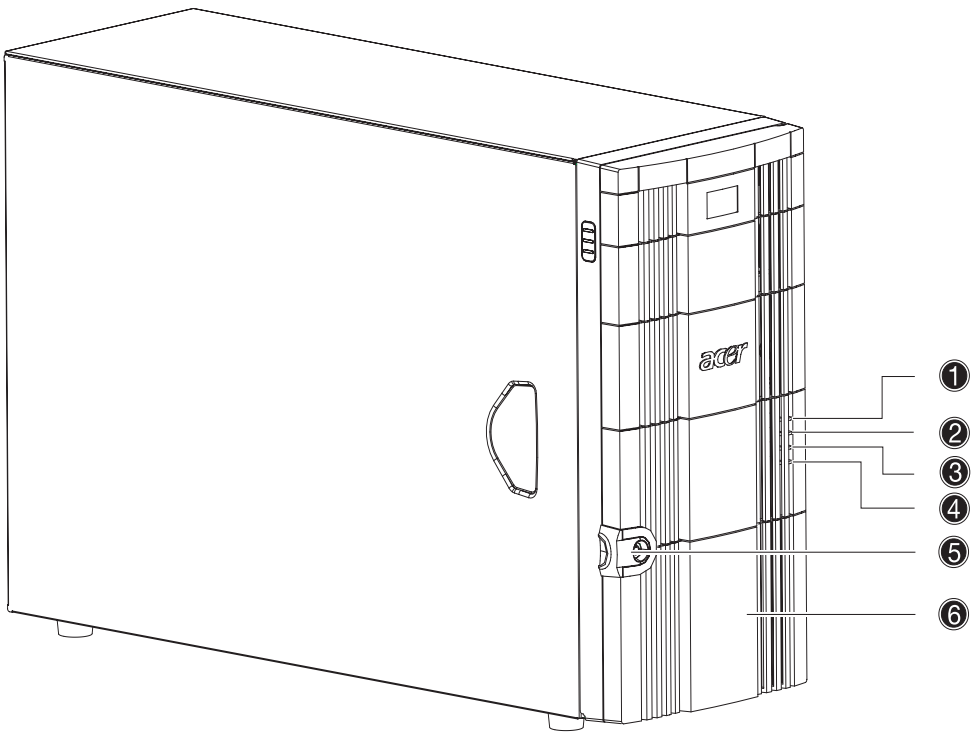
System Board Layout



Item	Description
BT1	Battery
BZ1	Buzzer
CN1	+12V Power Connector
CN2	ATX Power Connector
CN3	USB Ports
CN4	VGA / Monitor Port
COM1	Serial Port
CPU 1 and CPU 2	CPU sockets
DM1- DM4	DIMM slots
J2	Front Panel Connector
J3	Floppy disk drive connector
J4	Primary IDE Connector
J5	Secondary IDE Connector
J7	Chassis intrusion connector
J9	BMC daughter board connector
J10	MLB Jumper 1-2 Password Enable (Default Setting : OFF) 3-4 Clear NVRAM (Default Setting : OFF) 5-6 Recovery Mode (Default Setting : OFF)
J13	Wake on LAN Connector
J14	SCSI RAID card HDD LED connector
JF1	CPU 1 Fan connector
JF4	Front Fan connector
JF5	CPU 2 Fan connector
JF8	Rear System Fan connector
JP2	Power Supply management cable connector (connected to PDB board)
JP8	IPMB connector
JP9	SCSI HDD management cable connector (connected to Hot Plug HDD cage backplane board)
JP10	Connector for Remote Management Card (RMC)
J15	Power On/Off connector for RMC
J16	Reset Connector for RMC
KM1	Upper: PS/2 mouse port Lower: PS/2 Keyboard port
LAN1	Gigabit LAN port (10/100/1000 Mbps)
LTP1	Parallel / Printer Port
SLOT 1	64-bit / 66 MHz PCI bus slot (Zero Channel RAID compliant) (Green)
SLOT 2	64-bit / 66 MHz PCI bus slot (White)
SLOT 3 and SLOT 4	64-bit / 100 MHz PCI-X bus slots (Blue)
SLOT 5 and SLOT 6	32-bit / 33 MHz PCI bus slot (5V Support) (White)
SCSI 1	SCSI Connector

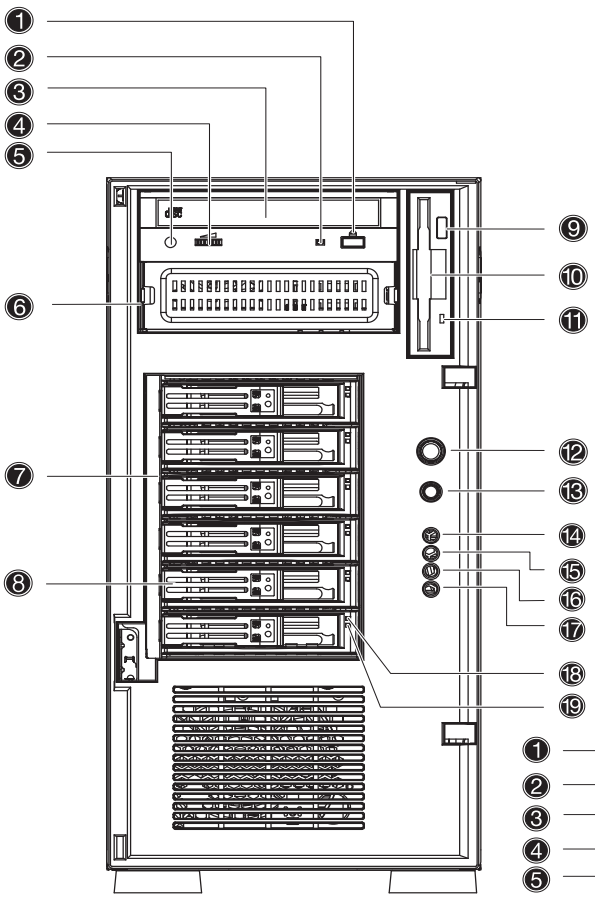
Item	Description
U4	ServerWorks CMIC - SL chipset (north bridge)
U12	System clock
U18	BCM5702 Gigabit LAN chipset
U19	LSI 53C1020 SCSI Chipset
U27	ServerWorks CIOBx2 chipsets (I/O bridge)
U34	ATI Rage XL VGA chipset
U45	ServerWorks CSB5 chipset (south bridge)
U46	Flash BIOS
U48	PC87414 SIO - Super I/O chipset
U49	Video RAM
USB1	USB Connector
VRM 9.1	Onboard VRMs (Voltage Regulator Module)

Front Bezel

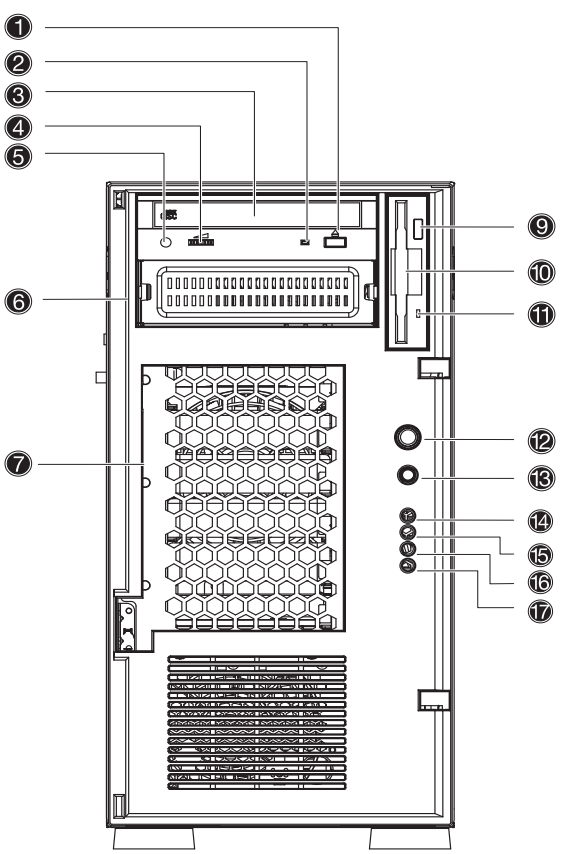


No.	Description
1	Power indicator
2	Hard disk activity indicator
3	System fault indicator
4	Hard disk fault indicator (for Altos G510 model only)
5	Security keylock
6	Front Bezel

Front Panel



Altos G510 model



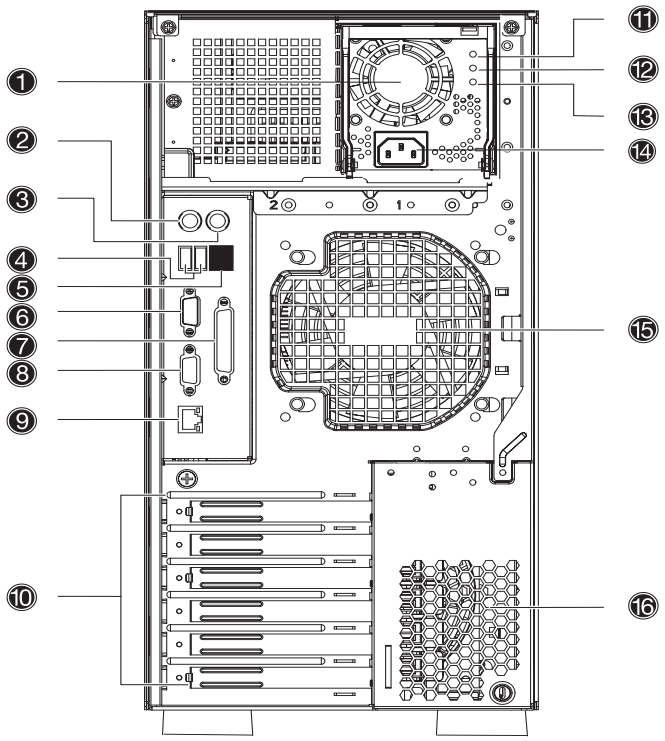
Altos G510 Basic model

NOTE: Unless otherwise indicated, all front panel features indicated on the table below apply to both the Altos G510 and Altos G510 Basic models.

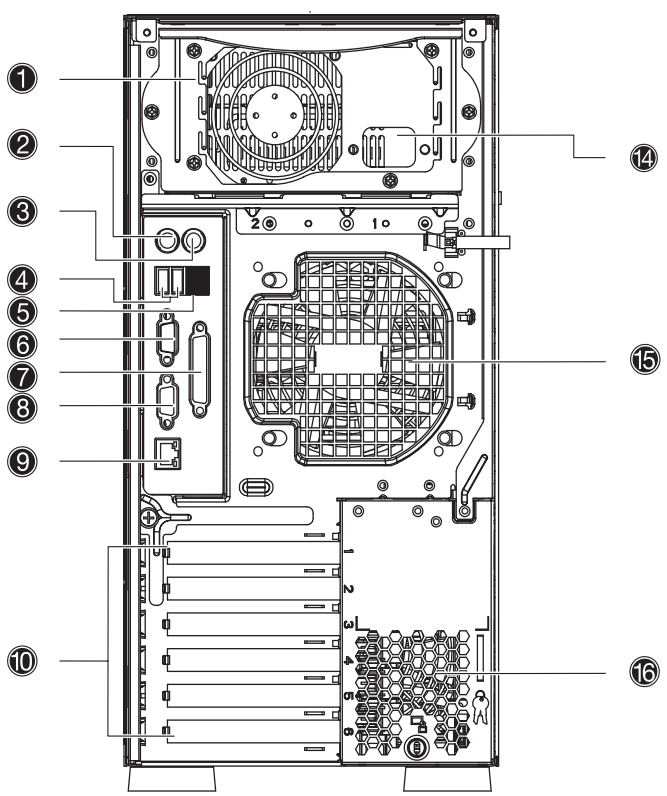
No.	Description
1	CD-ROM drive Stop/Eject button
2	CD-ROM drive activity indicator
3	CD-ROM drive
4	Volume control
5	CD-ROM drive Headphone/ Earphone port
6	5.25-inch half - height bay
7	Altos G510- BPL6 Hot Plug HDD cage Altos G510 Basic -non- Hot Plug HDD cable cage
8	HDD carrier (for BPL6 Hot Plug HDD Cage only)
9	Floppy drive Eject button
10	Floppy drive
11	Floppy drive activity indicator
12	Power button
13	Reset button
14	Power indicator
15	Hard disk activity indicator
16	System fault indicator
17	Hard disk fault indicator (for Altos G510 model only)
18	Hot Plug HDD power indicator[1] (for BPL6 Hot Plug HDD Cage only)
19	Hot Plug HDD access indicator [2] (for BPL6 Hot Plug HDD Cage only)

1. This indicator lights up green to indicate HDD power on and lights up in red when a HDD fault occurs.
2. This indicator light up green to indicate drive access.

Rear Panel



Altos G510 model



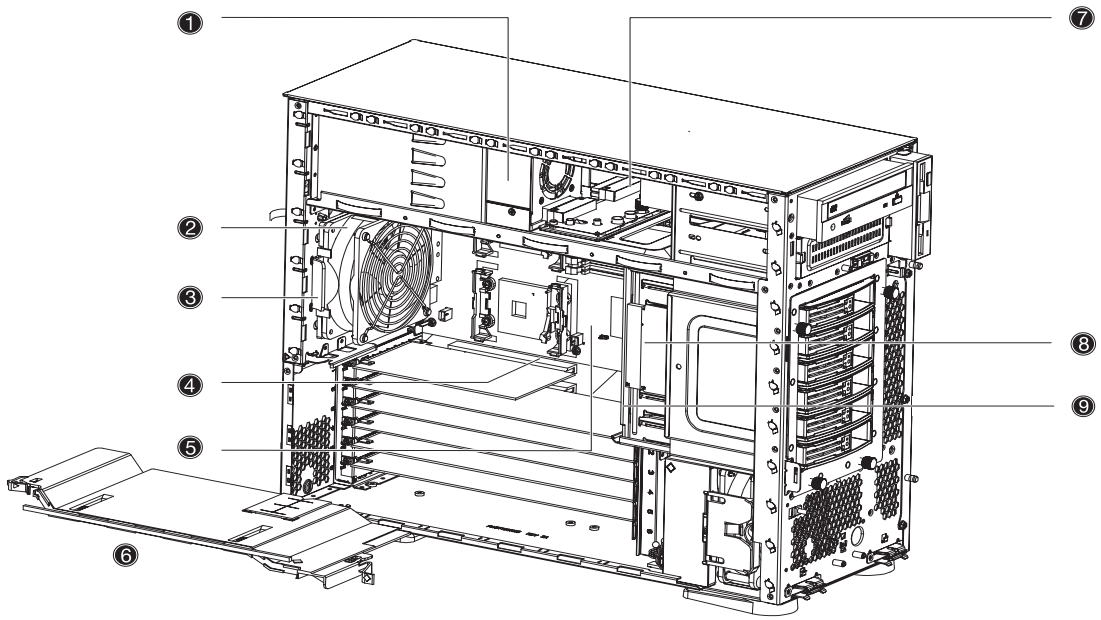
Altos G510 Basic model

NOTE: Unless otherwise indicated, all rear panel features indicated on the table below apply to both the Altos G510 and Altos G510 Basic models.

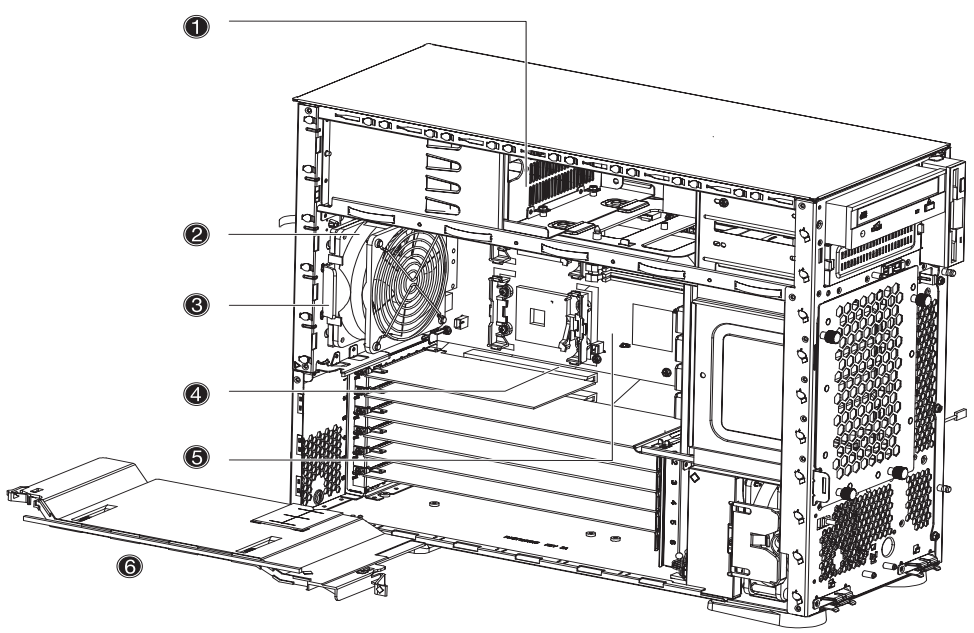
No.	Description
1	Altos G510 model - Main power supply unit
2	PS/2 keyboard port
3	PS/2 mouse port
4	USB ports
5	RDM LAN port (10Mbps)[1] This port is not accessible on Altos G510 and G510 Basic models.
6	Serial port
7	Parallel/Printer port
8	VGA / Monitor port
9	Gigabit LAN port (10/100/1000 Mbps)
10	Expansion slots
11	Main power supply indicator[2] (for Altos G510 model only)
12	Main power supply fail indicator[3]
13	Main power supply AC power indicator[4] (for Altos G510 model only)
14	Main power supply cable socket
15	Rear System Fan
16	Ventilation Slots

1. N/A on Altos G510 or G510 Basic model. Reserved for future models.
2. This indicator will light up green when the power supply module is functioning properly.
3. This indicator will light up amber when the power supply module or any PSU internal fan fails.
4. This indicator will light up green when the input voltage is within the AC input voltage range.

Internal Components



Altos G510 model



Altos G510 Basic model

NOTE: Unless otherwise indicated, all internal components indicated on the table below apply to both the Altos G510 and Altos G510 Basic models.

No.	Description
1	Altos G510 model - Power supply module bay for redundant PSU1 Altos G510 Basic model - Standard 450-watts PSU
2	Rear System Fan
3	Rear System Fan release latch
4	PCI bus slot
5	Mainboard
6	Air Baffle
7	Power distribution board (for Altos G510 model only)
8	Hot-swap HDD SAF-TE board (for Altos G510 model only)
9	Hot-swap HDD backplane board (for Altos G510 model only)

1. Though the system supports two hot-swappable power supply module bays, the system comes bundled with a single power supply module only. You have the option to purchase an extra power supply module to provide the system with redundant power source.

Hardware Specifications and Configurations

PCI Bus Subsystem

PCI Addressing Mapping

The table below summarizes the assignments of IDSEL pins and the PCI addresses of all PCI devices, and the figure shows the locations of all PCI devices.

PCI Device No. Map			
	PCI Bus No.	Device No.	AD No. (H.W.)
RAGE_XL_A	0	14	D_AD30
BCM5702	0	2	D_AD18
PCI_SLOT5	0	4	D_AD20
PCI_SLOT6	0	6	D_AD22
SCSI_LSI1020	1	4	P_AD20
PCI_SLOT1	1	2	P_AD18
PCI_SLOT2	1	6	P_AD22
PCI_SLOT3	2	2	S_AD18
PCI_SLOT4	2	4	S_AD20

System PCI REQ/GNT

The PCI 32-bit arbiters built in CNB20HE_SL. The PCI 64-bit arbiters built in CIOB20. The following table identifies the mapping of each individual device and REQ/GNT Usage:

PCI Device Arbitrate & Clock No. map Clock chip-ICS932S203/Cypress CY28329			
	Request No.	Grant No.	Clock No.
RAGE_XL_A	-PCIREQ4	-PCIGNT4	VGA_PCLK
BCM5702	-PCIREQ0	-PCIGNT0	540_PCICLK
SCSI_LSI1020	-P_REQ2	-P_GNT2	SCSI_PCICLK
PCI_SLOT1	-P_REQ0	-P_GNT0	PCICLK_SLT1
PCI_SLOT2	-P_REQ1	-P_GNT1	PCICLK_SLT2
PCI_SLOT3	-S_REQ0	-S_GNT0	PCICLK_SLT3
PCI_SLOT4	-S_REQ1	-S_GNT1	PCICLK_SLT4
PCI_SLOT5	-PCIREQ1	-PCIGNT1	PCICLK_SLT5
PCI_SLOT6	-PCIREQ2	-PCIGNT2	PCICLK_SLT6

System Management Bus (SMBus) Interface

There are one SMBus (I^2C) on G510 system been used for reading SPDs of DIMMs, accesses the CNB20HE_SL PCI configuration space, control the FAN and access the hardware monitor data.

Item	Target	Device	Address	Comment
1	CPU1	MEMORY	1010100xb	A8
		THERMAL SNSR	1001001xb	52
2	CPU2	MEMORY	1010101xb	AA
		THERMAL SNSR	1001010xb	54
3	CMIC	FUNCTION0	1100000xb	C0
		FUNCTION1		
		FUNCTION2		
4	CIOBX2		1100100xb	C8
5	CSB5			80
6	DIMM1	DIMM SPD	1010000xb	A0
7	DIMM2	DIMM SPD	1010001xb	A2
8	DIMM3	DIMM SPD	1010110xb	AC
9	DIMM4	DIMM SPD	1010111xb	AE
10	I^2C Buffer		0011000xb	30
13	BMC			
14	ADM 1026		0101100xb	58

RQ Assignments

There are three IO/APIC built in G510.One is ISA IO/APIC and the other two are PCI IO/APIC.

ISA IO/APIC IRQ Default Setting

System IRQ	Device
IRQ0	8254 Timer
IRQ1	Keyboard Controller
IRQ2	Cascade
IRQ3	Serial Port
IRQ4	Serial Port
IRQ5	USB
IRQ6	Floppy Controller
IRQ7	Parallel Port
IRQ8	RTC
IRQ9	Used for ACPI SCI
IRQ10	
IRQ11	
IRQ12	Mouse controller
IRQ13	System Interrupt/FERR
IRQ14	Primary IDE Controller
IRQ15	Secondary IDE Controller

PCI Interrupt Routing in PCI Mode

To program the PCI interrupt router is via PCI interrupt routing index and data registers. The index register of PCI interrupts routing is C00h and the data register is C01h. The bit 7-4 of data register is reserved. The value programming into data register is the mapped IRQ number. The value “0” is represented that disables the mapping and IRQ2, 8 & 13 are reserved.

Interrupt Routing

Device	INTA	INTB	INTC	INTD
USB	-PCIIRQ15			
RAGE_XL_A	-PCIIRQ2			
BCM5702	-PCIIRQ0			
SCSI_LSI1020	-PCIIRQ13			
PCI_SLOT1	-PCIIRQ1	-PCIIRQ2	-PCIIRQ3	-PCIIRQ4
PCI_SLOT2	-PCIIRQ4	-PCIIRQ3	-PCIIRQ2	-PCIIRQ1
PCI_SLOT3	-PCIIRQ5	-PCIIRQ6	-PCIIRQ7	-PCIIRQ8
PCI_SLOT4	-PCIIRQ8	-PCIIRQ7	-PCIIRQ6	-PCIIRQ5
PCI_SLOT5	-PCIIRQ9	-PCIIRQ10	-PCIIRQ11	-PCIIRQ12
PCI_SLOT6	-PCIIRQ12	-PCIIRQ11	-PCIIRQ10	-PCIIRQ9

PCI Interrupt Routing in APIC Mode

IOAPIC Entry	IO APIC	Interrupt Source
INTIN0	ISA IO APIC	IRQ0/INTR
INTIN1	ISA IO APIC	IRQ1
INTIN2	ISA IO APIC	IRQ2/SMI
INTIN3	ISA IO APIC	IRQ3
INTIN4	ISA IO APIC	IRQ4
INTIN5	ISA IO APIC	IRQ5
INTIN6	ISA IO APIC	IRQ6
INTIN7	ISA IO APIC	IRQ7
INTIN8	ISA IO APIC	IRQ8#
INTIN9	ISA IO APIC	IRQ9
INTIN10	ISA IO APIC	IRQ10
INTIN11	ISA IO APIC	IRQ11
INTIN12	ISA IO APIC	IRQ12
INTIN13	ISA IO APIC	IRQ13
INTIN14	ISA IO APIC	IRQ14
INTIN15	ISA IO APIC	IRQ15
INTIN0	PCI IO APIC	NIC 82540EM
INTIN1	PCI IO APIC	Slot 1 INTA# & Slot 2 INTD#
INTIN2	PCI IO APIC	Slot 1 INTB# & Slot 2 INTC#
INTIN3	PCI IO APIC	Slot 1 INTC# & Slot 2 INTB#
INTIN4	PCI IO APIC	Slot 1 INTD# & Slot 2 INTA#
INTIN5	PCI IO APIC	Slot 3 INTA# & Slot 4 INTD#
INTIN6	PCI IO APIC	Slot 3 INTB# & Slot 4 INTC#
INTIN7	PCI IO APIC	Slot 3 INTC# & Slot 4 INTB#
INTIN8	PCI IO APIC	Slot 3 INTD# & Slot 4 INTA#
INTIN9	PCI IO APIC	Slot 5 INTA# & Slot 6 INTD#
INTIN10	PCI IO APIC	Slot 5 INTB# & Slot 6 INTC#
INTIN11	PCI IO APIC	Slot 5 INTC# & Slot 6 INTB#
INTIN12	PCI IO APIC	Slot 5 INTD# & Slot 6 INTA#
INTIN13	PCI IO APIC	LSI53C1020 INTA#
INTIN14	PCI IO APIC	
INTIN15	PCI IO APIC	USB IRQ#

State Transition

The sleeping states supported by G510 are only S1 and S5.

Table below shows the wake up events in each state.

Wake up Events	States Can Wake From
RTC	S5
Power Button	S5
RI#	S5
PME#	S5
KB	S1
MOUSE	S1
USB	S1

The way to transfer system to S5 from S0 in ACPI OS. Use OS build-in function:

ACPI OS provide the interface to allow user directly execute this function.

S0 to S5 (G2)

Item	Description
Set Timer	ACPI OS provide the interface to allow user directly execute this function.
Power Button	When power button is pressed, PC87414 will issue an SCI (via SIO_WAKEUP).
Sleep Button	When sleep button is pressed, CSB5 will issue an SCI(Not Implement).

The ways to wake up system from S5.

S5 to S0

Item	Description
Power Button	When power button is pressed in S5, the ONCTRL# will be asserted and system will power on.
PME#	Whenever PME# is asserted by one of the PCI devices in S5, the ONCTRL# will be asserted and system will power on.
RI	Whenever RI is asserted from COM1 in S5, the ONCTRL# will be asserted and system will power on.
RTC Alarm	When an alarm condition is detected, the ONCRTL# will be asserted and system will power on.

G3 (Power Failure) & Auto Power Recovery

Power failure means the AC power is lost. In this state, only battery power exists. G510 uses “Auto Power Recovery” to manage the AC power recovers in G3 state. It means that when AC power is back in G3 state, the system will back to S5 state first and determine it should stay in this state or assert the ONCTRL# to power on system. In our design, the system will remember the state that it loses the AC power. Then it will back to the “remembered state” when AC is back.

System Utilities

Most system are already configured by the manufacturer or the dealer. There is no need to run Setup when starting the computer unless you get a Run Setup message.
The Setup program loads configuration values into the battery-backed nonvolatile memory called COMS RAM. This memory area is not part of the system RAM.

NOTE: If you repeatedly receive Run Setup messages, the battery may be bad. In this case, the system cannot retain configuration values in CMOS. Ask a qualified technician for assistance.

Before you run Setup, make sure that you have saved all open files. The system reboots immediately after you exit Setup.
As you change your BIOS Setup, examine the system configuration values. When you are satisfied that all the values are correct, write them down. Store the recorded values in a safe place. In the future, if the battery loses power or the CMOS chip is damaged, you can easily recreate your Setup.

Entering setup

Power on the server to start the system POST (Power On Self Test) process. During bootup, press **Ctrl-Alt-Esc** to enter the BIOS setup.

NOTE: You must press **Ctrl-Alt-Esc** while the system is booting. This key combination does not work during any other time.

There are several tabs on the setup screen corresponding to the six major BIOS menus:

- Main
- Advanced
- Power
- Boot
- Security
- Exit

The programeters on the screens shown in this Service Guide display default system values. These values may not be the same as those in your system.

Note the following reminders when moving around the setup screen:

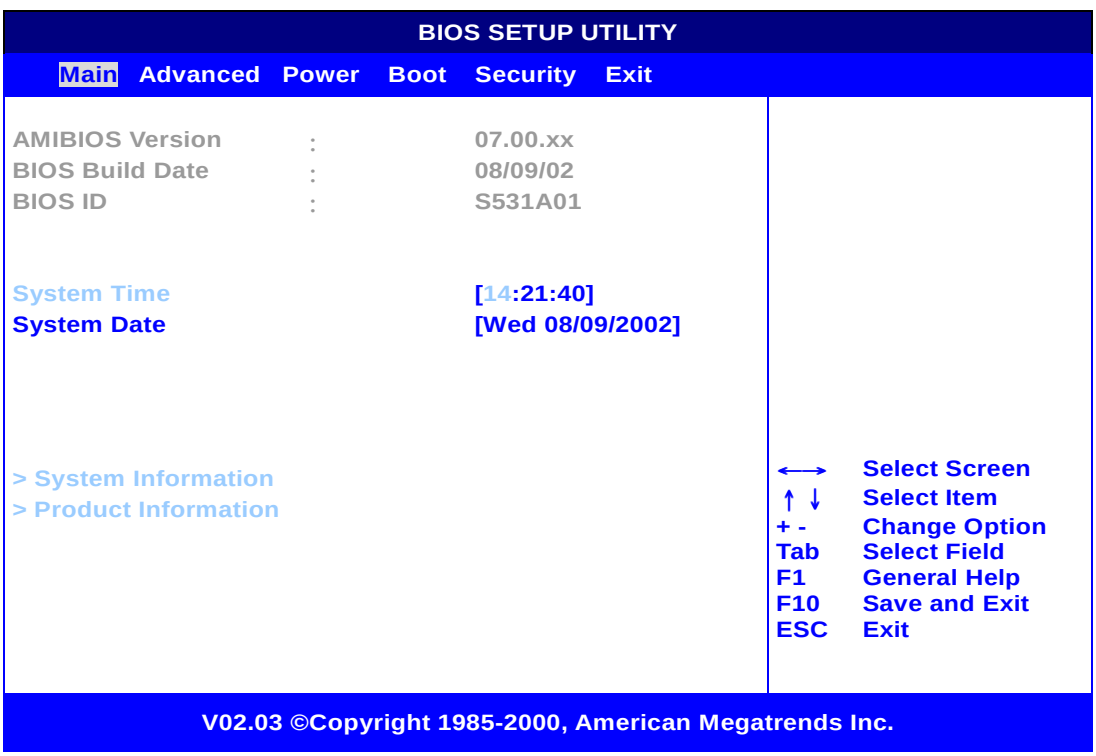
- Use the **Left** and **Right** arrow keys to move to the next page or to return to the previous screen.
- Use the **Up** and **Down** arrow keys to select an item.
- Use the **+** and **-** keys to select an option.
- Use the **Tab** key to select a field.
- Use the **Enter** key to display a submenu screen.
- Press **F1** for General Help on using the BIOS setup.
- Press **F10** to save changes and does the BIOS setup.
- Press **Esc** to close the BIOS setup.

In the descriptive table following each of the screen illustrations, settings in **boldface** are the default and suggested parameter settings.

Main

Then Main menu displays basic and important information about the system. These information is necessary for troubleshooting and may be required when asking for technical support.

The last two parameters on the screen lets you define the system's time and date settings. The real-time clock keeps the system date and time. After setting the date and time, you do not need to enter them every time you turn on the system. As long as the internal battery remains good and connected, the clock continues to keep the date and time accurately even when the power off.



Parameter	Description
AMIBIOS Version	Version of the BIOS setup
BIOS Build Date	Date when the BIOS setup was created
BIOS ID	ID number of the BIOS setup
System Time	Sets the time following the hour-minute-second format. Valid values for hour, minute, and second are: Hour: 00 to 23 Minute: 00 to 59 Second: 00 to 59

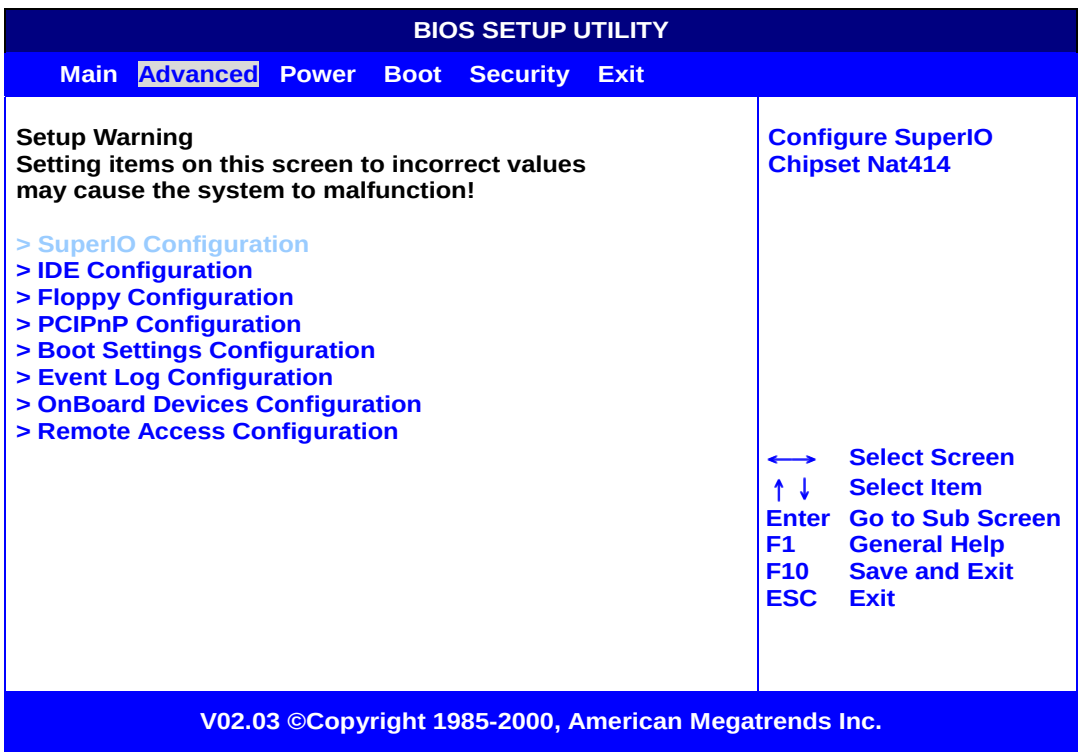
Parameter	Description
System Date	Sets the date following the weekday-month-day-year format. Valid values for weekday, month, day, and year are: Weekday: Sun, Mon, Tue, Wed, Thu, Fri, Sat Month: 1 to 12 Day: 1 to 31 Year: 1980 to 2079

Advanced

The advanced menu contains parameter values that define how the system behaves on startup.

WARNING: Be cautious in setting parameter values in the Advanced menu as any incorrect value may cause the system to malfunction.

Press **Enter** to enter the submenu screen of the parameters shown in the screen below.


BIOS SETUP UTILITY
Main Advanced Power Boot Security Exit
Setup Warning
Setting items on this screen to incorrect values may cause the system to malfunction!
> SuperIO Configuration
> IDE Configuration
> Floppy Configuration
> PCIPnP Configuration
> Boot Settings Configuration
> Event Log Configuration
> OnBoard Devices Configuration
> Remote Access Configuration
Configure SuperIO Chipset Nat414
Select Screen
Select Item
Enter Go to Sub Screen
F1 General Help
F10 Save and Exit
ESC Exit
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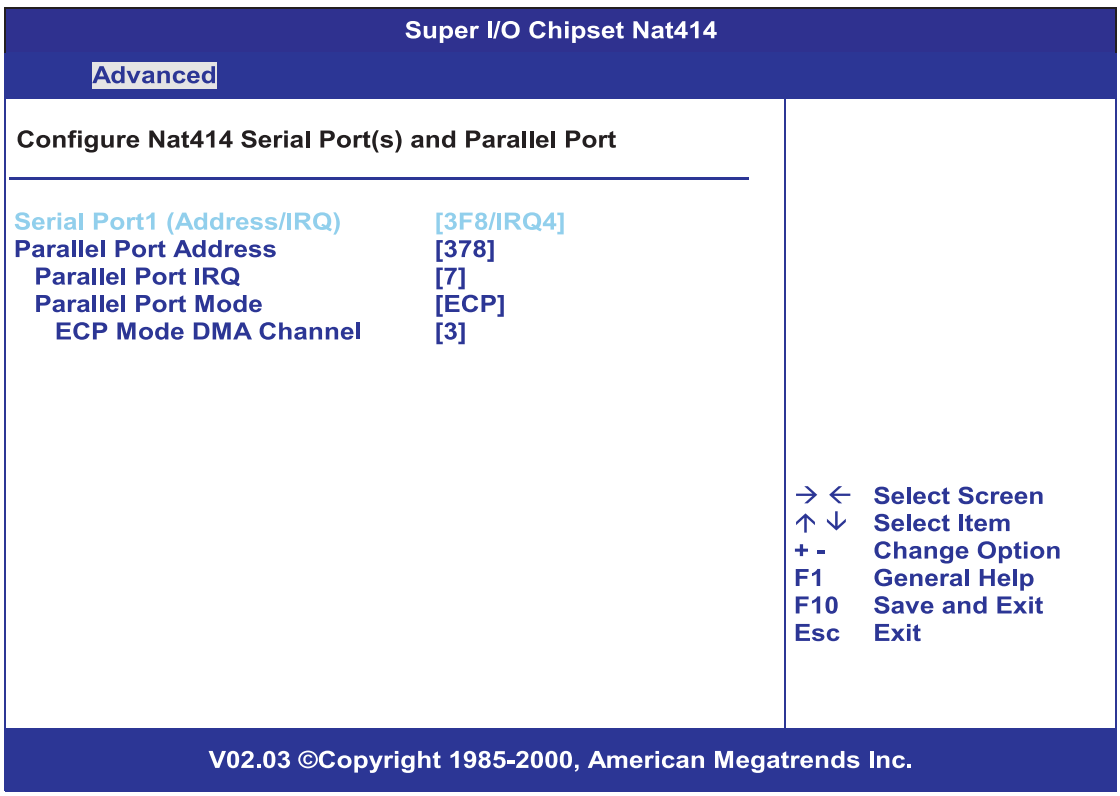
Super I/O Configuration

The Super I/O Configuration submenu lets you define the parameter settings for the system's parallel and serial ports.


Super I/O Chipset Nat414
Advanced
Configure Nat414 Serial Port(s) and Parallel Port
Serial Port1 (Address/IRQ) [3F8/IRQ4]
Parallel Port Address [378]
Parallel Port IRQ [7]
Parallel Port Mode [ECP]
ECP Mode DMA Channel [3]
→ ← Select Screen
↑ ↓ Select Item
+ - Change Option
F1 General Help
F10 Save and Exit
Esc Exit
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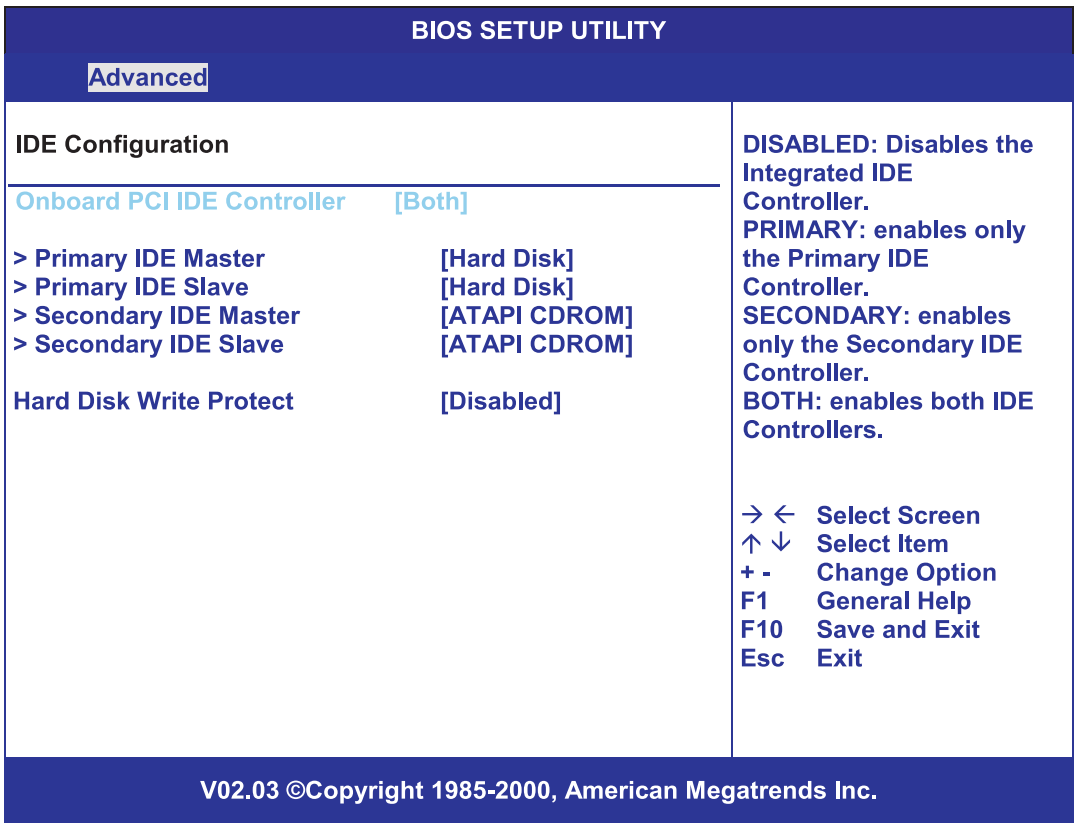
Parameter	Description
Serial Port 1 (Addres/ IRQ)	Serial port 1 address and IRQ (interrupt request) setting
Parallel Port Address	Sets a logical base address for the parallel port
Parallel Port IRQ	Assigns an IRQ for the parallel port. If you install an add-on card that has a parallel port whose
Parallel Port Mode	Sets the operation mode for the parallel port
ECP Mode DMA Channel	Assigns a DMA (Direct Memory Access) channel for the ECP (Extended Capabilities Port) parallel port function. This parameter is configurable only if you select ECP as the operation mode.

IDE Configuration

The IDE Configuration submenu lets you define the parameter settings related to the hard disk/s.


BIOS SETUP UTILITY
Advanced
IDE Configuration
Onboard PCI IDE Controller [Both]
> Primary IDE Master [Hard Disk]
> Primary IDE Slave [Hard Disk]
> Secondary IDE Master [ATAPI CDROM]
> Secondary IDE Slave [ATAPI CDROM]
Hard Disk Write Protect [Disabled]
DISABLED: Disables the Integrated IDE Controller.
PRIMARY: enables only the Primary IDE Controller.
SECONDARY: enables only the Secondary IDE Controller.
BOTH: enables both IDE Controllers.
→ ← Select Screen
↑ ↓ Select Item
+ - Change Option
F1 General Help
F10 Save and Exit
Esc Exit
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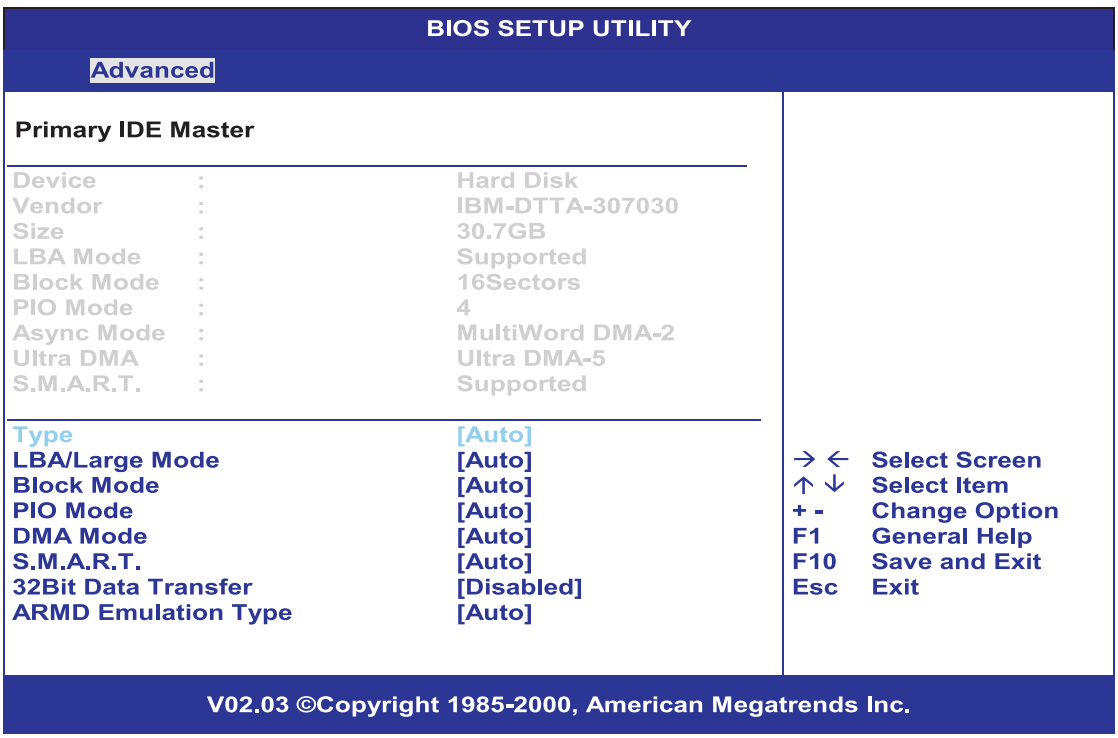
Parameter	Description
Onboard PCI IDE Controller	Selects which system IDE controller to enable
Primary IDE Master	Press **Enter** to access the Primary IDE Master submenu.
Primary IDE Slave	Press **Enter** to access the Primary IDE Slave submenu.
Secondary IDE Master	Press **Enter** to access the Secondary IDE Master submenu
Secondary IDE Slave	Press **Enter** to access the Secondary IDE Slave submenu
Hard Disk Write Protect	Enables or disables the hard disk write protect function.

Primary/Secondary IDE Master/ Slave

These items let you select the IDE hard disk parameters that the system supports.

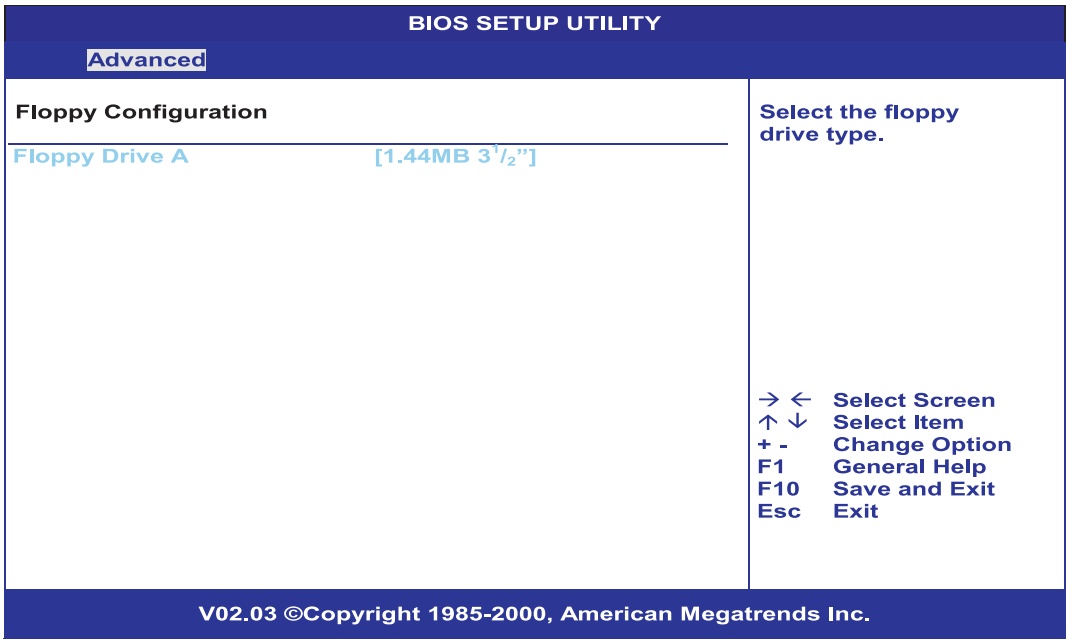


Parameter	Description	Option
Device	Type of IDE device	
Vendor	Vendor of the selected IDE device	
Size	Size of the select device	
Type	Driver Type	**Auto** CD-ROM ARMD Not Installed
LBA/Large Mode	Selects the hard disk drive translation method. For drivers with more than 504 MB, the LBA mode is necessary.	**Auto** Disable
Block Mode	Enhances disk performance depending on the hard disk in use. If you set this parameter to Auto, BIOS setup automatically detects if the installed hard disk drive supported, it allows date transfer in blocks (multiple sectors) at a rate of 256 bytes per cycle. If you set this parameter to Disabled, data transfer from and to the device occurs one sector at a time.	**Auto** Disabled

Parameter	Description	Option
PIO Mode	When set to Auto, BIOS setup automatically detects if the installed hard disk supports the function. If supported, it allows for faster data recovery and read/write timing that reduces hard disk activity time. This results in better hard disk performance. Mode 0 to 4 provide successive increase of performance.	**Auto** 0 1 2 3 4
DMA Mode	Selects DMA (Direct Memory Access) mode. Options include: Auto: Auto detected SWDMAn: SingleWordDMAn MWDMAn: MultiWordDMAn UDMAn: UltraDMAn	**Auto** SWDMAn MWDMAn UDMAn
S.M.A.R.T	Enables or disables the S.M.A.R.T (Self-Monitoring, Analysis and Reporting Technology) function of the internal hard disk. If “Auto” is selected, BIOS setup will enable the S.M.A.R.T function if the driver supports it.	**Auto** Disabled Enabled
32-bit Data Transfer	Enables or disables the 32-bit data transfer function	**Disabled** Enabled
ARMD Emulation Type	Selects the ARMD (ATAPI Removable Media Device) emulation type.	**Auto** Floppy Hard Disk

Floppy Configuration

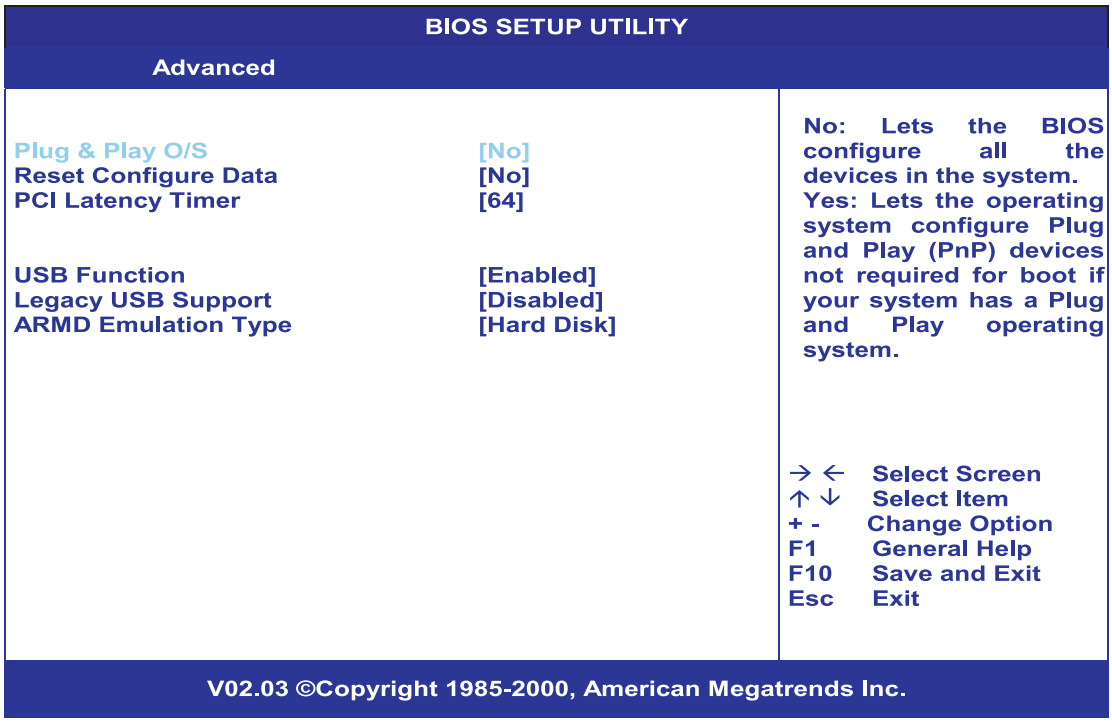
The Floppy Configuration submenu displays the type of floppy drive installed in the server.



Parameter	Description	Option
Floppy Drive A	Floppy Disk drive type	**1.44MB, 3.5-inch** None

PCI/PnP Configuration

The PCI/PnP Configuration submenu lets you specify the settings for the PCI devices.


BIOS SETUP UTILITY
Advanced
Plug & Play O/S [No]
Reset Configure Data [No]
PCI Latency Timer [64]
USB Function [Enabled]
Legacy USB Support [Disabled]
ARMD Emulation Type [Hard Disk]
No: Lets the BIOS configure all the devices in the system.
Yes: Lets the operating system configure Plug and Play (PnP) devices not required for boot if your system has a Plug and Play operating system.
→ ← Select Screen
↑ ↓ Select Item
+ - Change Option
F1 General Help
F10 Save and Exit
Esc Exit
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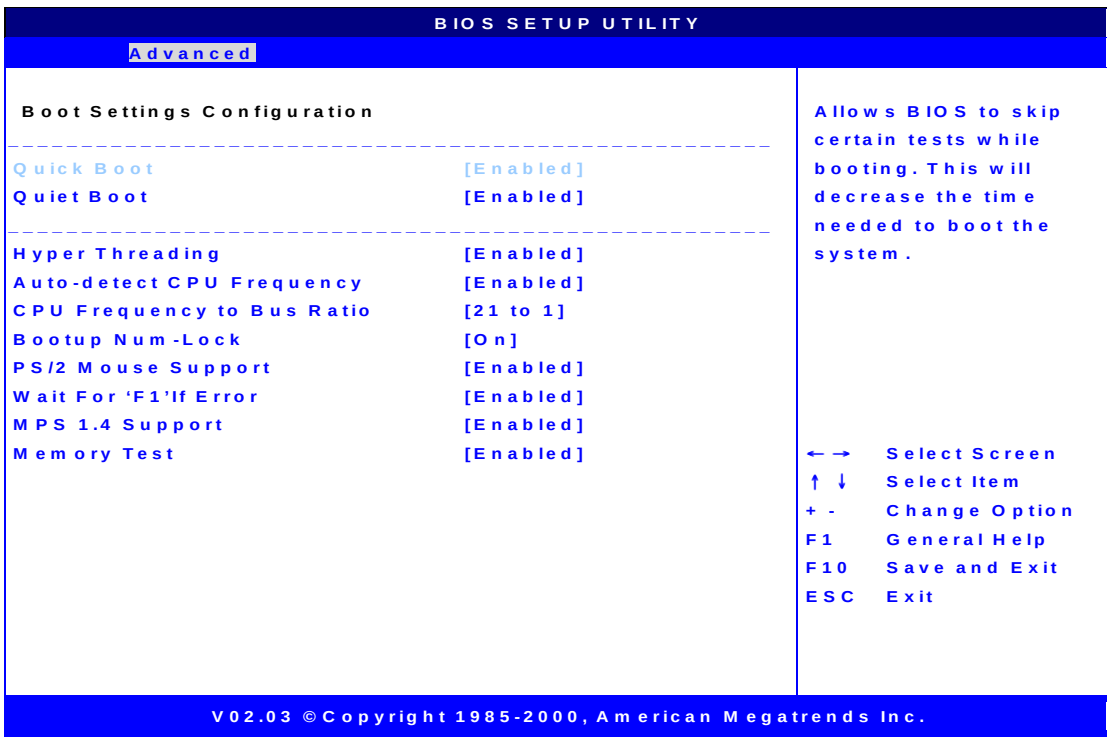
Parameter	Description	Option
Plug & Play OS	When this parameter is set to Yes, BIOS setup initializes only PnP boot devices such as SCSI cards. When set to No, the BIOS setup initializes all PnP boot and non-boot devices such as sound cards. **Note**: Set this parameter to Yes only if the operating system is Windows 95/98 or a later version.	**No** Yes
Reset Configure Data	BIOS setup stores the configuration data of Plug and Play devices in NVRAM (Non-volatile Random Access Memory). When this parameter is set to Yes, current data is deleted and a new set of information is created during the next system bootup.	**No** Yes
PCI Latency Timer	Sets a timing parameter for the PCI bus	**64**
USB Function	Enables the system's USB ports	**Enabled** Disabled
Legacy USB Support	Enable this parameter when you intend to use a USB device and are using a non-Plug and Play operating system, such as DOS.	**Disabled** Auto
ARMD Emulation Type	Selects the ARMD (ATAPI Removable Media Device) emulation type	**Hard Disk** Auto Floppy

Boot Settings Configuration

The Boot Settings Configuration submenu lets you specify the preferred settings for system bootup.


BIOS SETUP UTILITY
Advanced
Boot Settings Configuration
Quick Boot [Enabled]
Quiet Boot [Enabled]
Hyper Threading [Enabled]
Auto-detect CPU Frequency [Enabled]
CPU Frequency to Bus Ratio [21 to 1]
Bootup Num-Lock [On]
PS/2 Mouse Support [Enabled]
Wait For 'F1'If Error [Enabled]
MPS 1.4 Support [Enabled]
Memory Test [Enabled]
Allows BIOS to skip certain tests while booting. This will decrease the time needed to boot the system.
← → Select Screen
↑ ↓ Select Item
+ - Change Option
F1 General Help
F10 Save and Exit
ESC Exit
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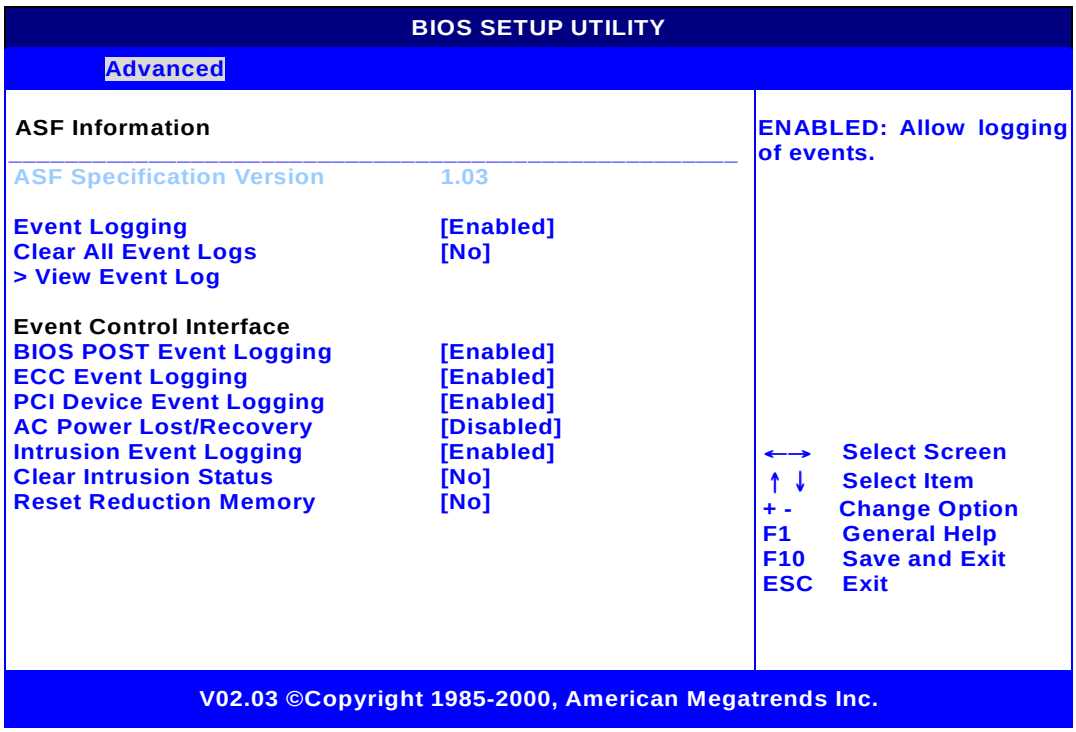
Parameter	Description	Option
Quick Boot	Allows the system to boot faster by skipping some POST routine	**Enabled** Disabled
Quiet Boot	Enables or disables the Quiet Boot function. When set to Enabled, BIOS setup is in graphical mode and displays only an identification logo during POST and while booting. After booting, the screen displays the operating system prompt (such as DOS) or logo (such as Windows). If any error occurs while booting, the system automatically switches to text mode. Even if your setting is Enabled, you may still switch to text mode while booting by pressing the Delete key when you see the " Press CTRL-ALT-ESC key to enter setup" message on the screen. When set to Disabled, BIOS setup is in the conventional text mode where you see the system initialization details on the screen.	**Enabled** Disabled

Parameter	Description	Option
Hyperthreading	Enable or disables the hyperthreading function of the processor. When enabled, one physical processor acts as two logical processors by “ threading” two sets of data instructions in parallel streams for processing. The processor can then simultaneously manage incoming data from different applications without losing track of the data processing status of each.	**Enabled** Disabled
Auto-Detect CPU Frequency	BIOS will set the CPU optimal speed to its highest speed without re-entering BIOS Setup to load default settings.	**Enabled**
Boot up Num Lock	Activates the Num Lock function upon booting	**On** Off
CPU Frequency to Bus Ratio	CPU/Bus ratio of the system. The clock speed of the bus does not necessarily equal the CPU’s. Mostly, the bus clock speed is slower than the CPU clock speed.	21 to 1
PS/2 Mouse Support	Enable this parameter if you intend to use a mouse or trackball with a PS/2 interface.	**Enabled** Disabled
Wait for “F1” if Error	When this item is enabled you will be prompted to press F1 when an error is detected during boot up.	**Enabled** Disabled
MPS 1.4 Support	If you enable this item, the system BIOS MP table will be compatible with MultiProcessor Specification version 1.4	**Enabled** Disabled
Memory Test	Allows BIOS to skip certain tests while booting. Then will decrease the time needed to boot the system.	**Enabled** Disabled

Event Log Configuration

The Event Log Configuration submenu lets you specify the appropriate settings for the system’s event handling function.

The system event log enables you to record and monitor events that occur in the system(e.g. system temperature changes, fan stops, etc.).

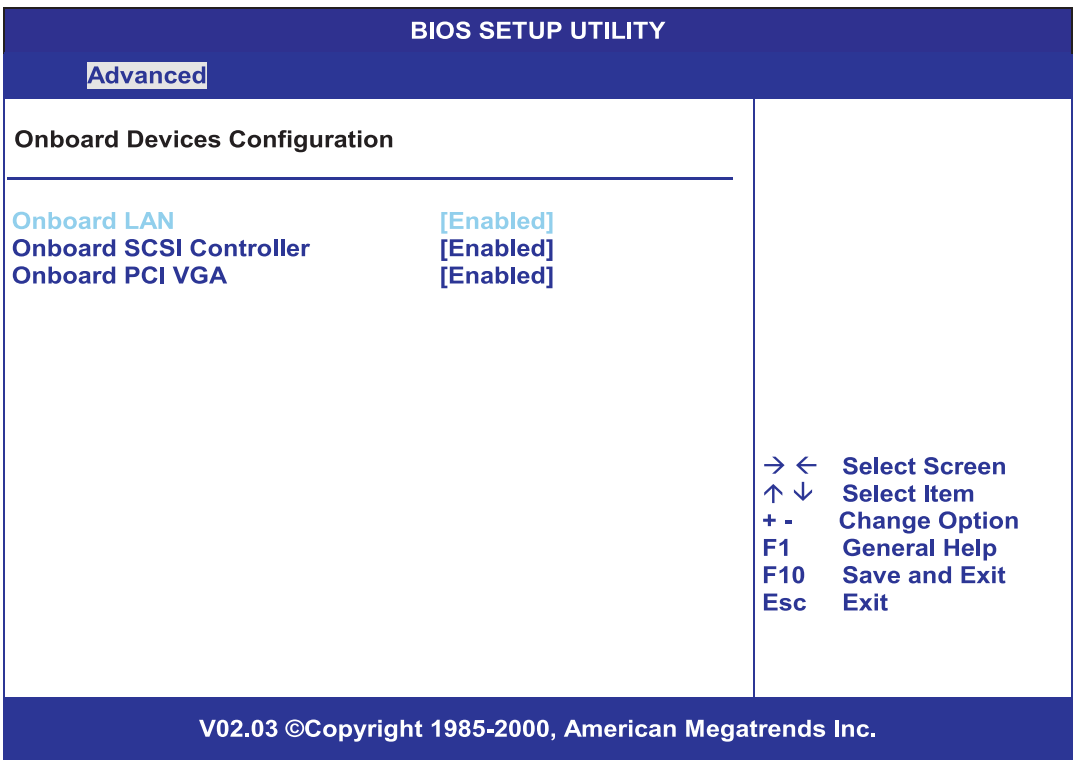


Parameter	Description	Option
ASF Specification Version	Version number of ASF	
Event Logging	Enables or disables the event logging function of the system	**Enabled** Disabled
Clear All Event Logs	When this item is set to Enabled, the event log is cleared and this parameter is set to Disabled for the next system bootup.	**No** Yes
View Event Logs	Opens the system event log file for viewing	
BIOS POST Event Logging	BIOS checks the bad processors and memory modules during the POST process. When this parameter is enabled, it will make a log of this operation.	**Enabled** Disabled
ECC Event Logging	ECC (Error Correction Code) tests the accuracy of data as it passes in and out of memory. When this parameter is enabled, single-bit and multi-bit memory errors will be recorded in the event log.	**Enabled** Disabled
PCI Device Event Logging	PCI (Peripheral Component Interconnect) is a 32-bit bus that supports a 64-bit extension for new processors, such as Pentium processors. It can run at clock speeds of 33 or 66 MHz. When this parameter is enabled, any PCI device error will be recorded in the event log.	**Enabled** Disabled

Parameter	Description	Option
AC Power Lost/Recovery	When this parameter is enabled, any instance of AC power lost will be monitored and logged in the event log.	**Disabled** Enabled
Intrusion Event Logging	Allow logging of chassis intrusion events.	**Enabled**
Clear Intrusion Status	Clear chassis intrusion status on next Boot.	**Yes** No
Reset Reduction Memory	When this paramter is enabled, only the system's healthy memory size is displayed during the POST process.	**No** Yes

Onboard Devices Configuration

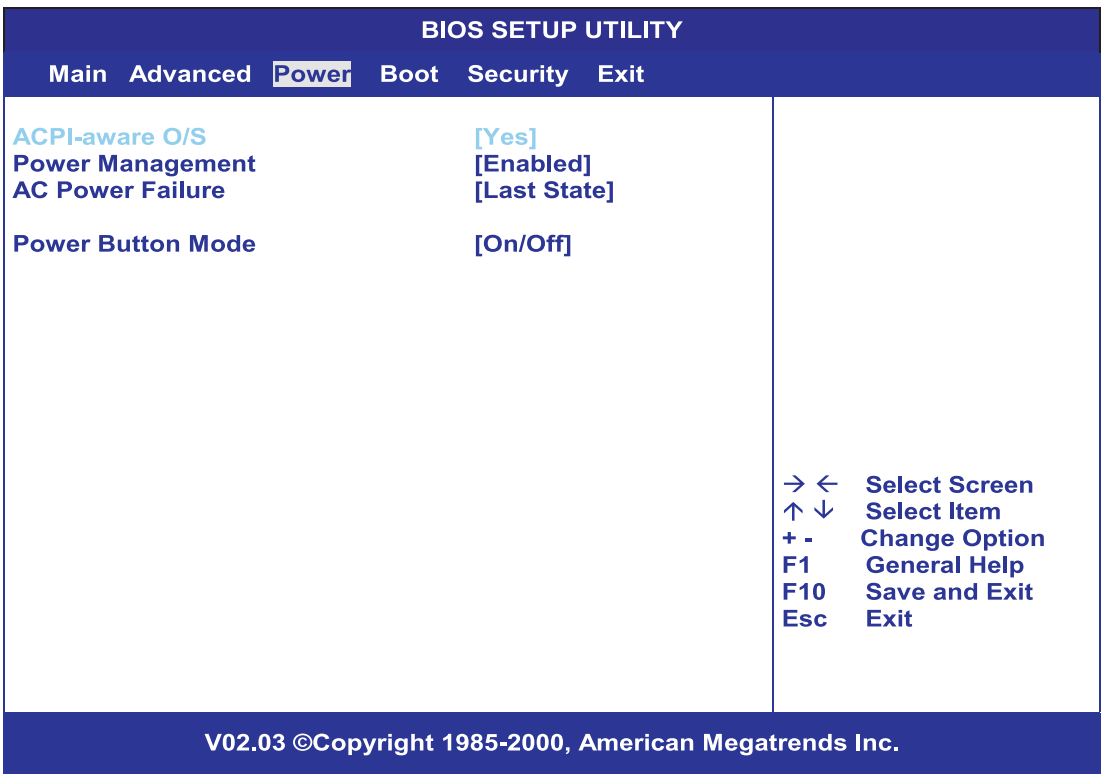
The onboard Devices Configuration submenu lets you specify settings that are relatd to the system hardware.



Parameter	Description	Option
Onboard LAN	Enables or disables the onboard LAN controller	**Enabled** Disabled
Onboard SCSI Controller	Enables or disables the onboard SCSI controller	**Enabled** Disabled
Onboard PCI VGA	Enables or disables the onboard PCI VGA controller	**Enabled** Disabled

Power

The power menu allows you to configure the system's power management feature.

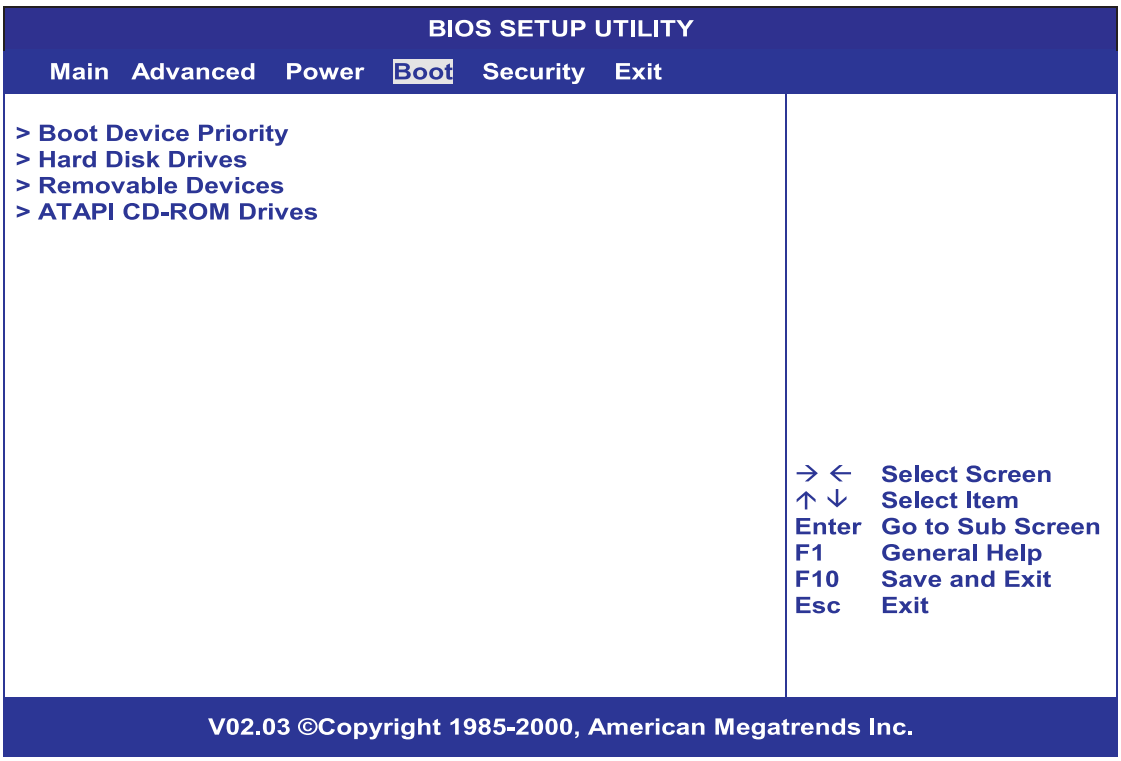


Parameter	Description	Option
ACPI-aware O/S	This parameter indicates whether the system's OS support the ACPI (Advanced Configuration and Power Interface) standard of power management.	**Yes** No
Power Management	When this parameter is enabled, it allows some OS, such as Windows 95/98 to implement APM (Advanced Power Management) functions.	**Enabled** Disabled
AC Power Failure	Defines the power state to resume to after a system shutdown that is due to an interruption in AC power. When set to Last State, the system will return to the active power state prior to shutdown. When set to Stay Off, the system remains off after power shutdown.	**Last State** Stay Off
Power Button Mode	When set to On/Off, the power button serves as a standard on/off button. When set to Suspend, pressing the power button will activate the power-saving suspend mode.	**On/Off** Suspend

Boot

The Boot menu allows you to specify the preferred setting during system bootup.

Press **Enter** to enter the submenu screen of the parameters shown in the screen below.


BIOS SETUP UTILITY
Main Advanced Power Boot Security Exit
> Boot Device Priority
> Hard Disk Drives
> Removable Devices
> ATAPI CD-ROM Drives
→ ← Select Screen
↑ ↓ Select Item
Enter Go to Sub Screen
F1 General Help
F10 Save and Exit
Esc Exit
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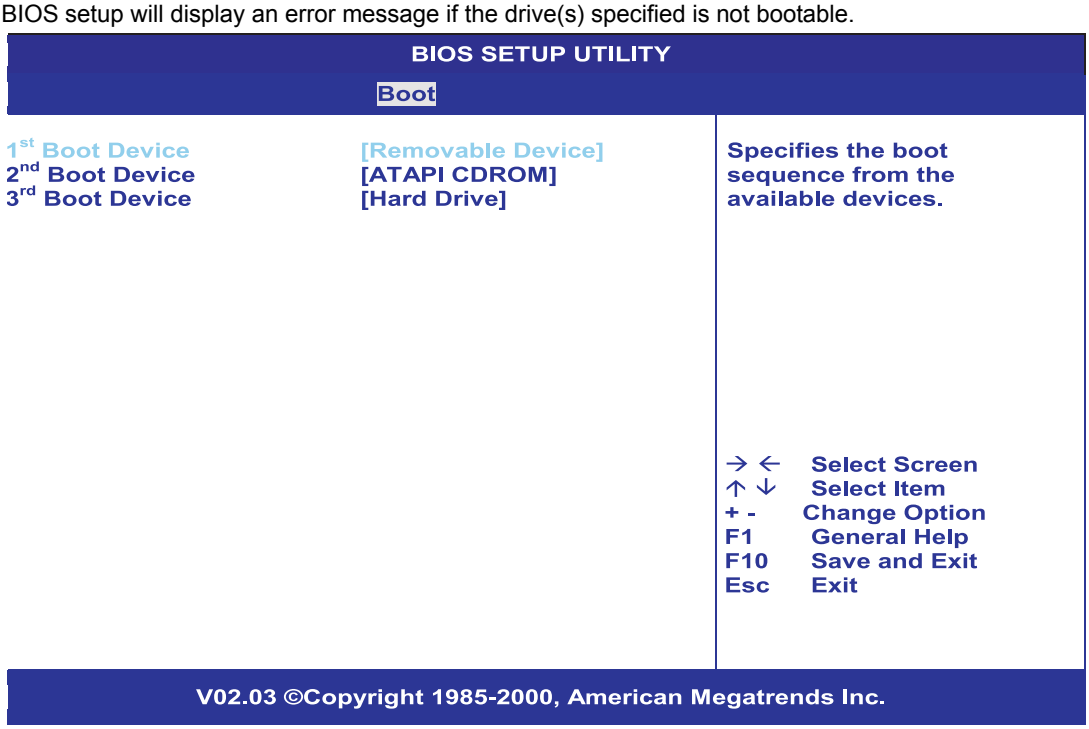
Boot Device Priority

The Boot Device Priority submenu lets you specify the boot search sequence during the POST process.

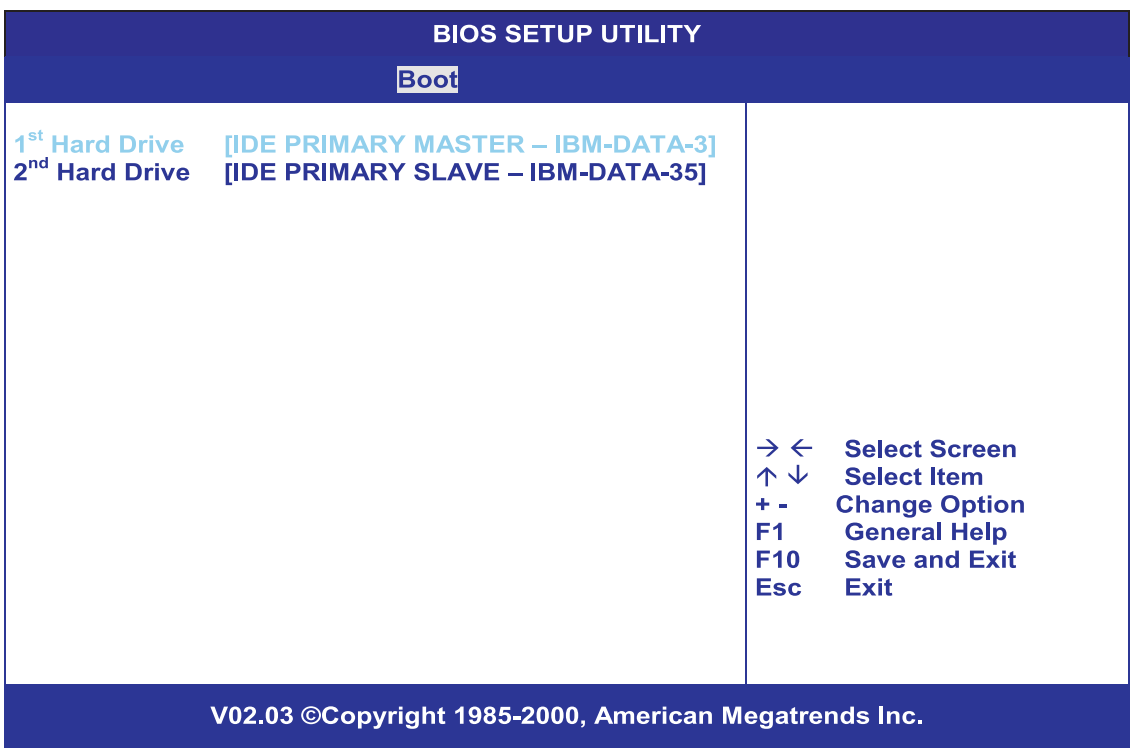
BIOS setup will display an error message if the drive(s) specified is not bootable.



Parameter	Description
1st Boot Device	Sets the device from which the system will first attempt to boot up.
2nd Boot Device	Sets the device from which the system will attempt to boot up when the first attempt failed.
3rd Boot Device	Sets the device from which the system will attempt to boot up when the first and second attempts failed.

Hard Disk Drives

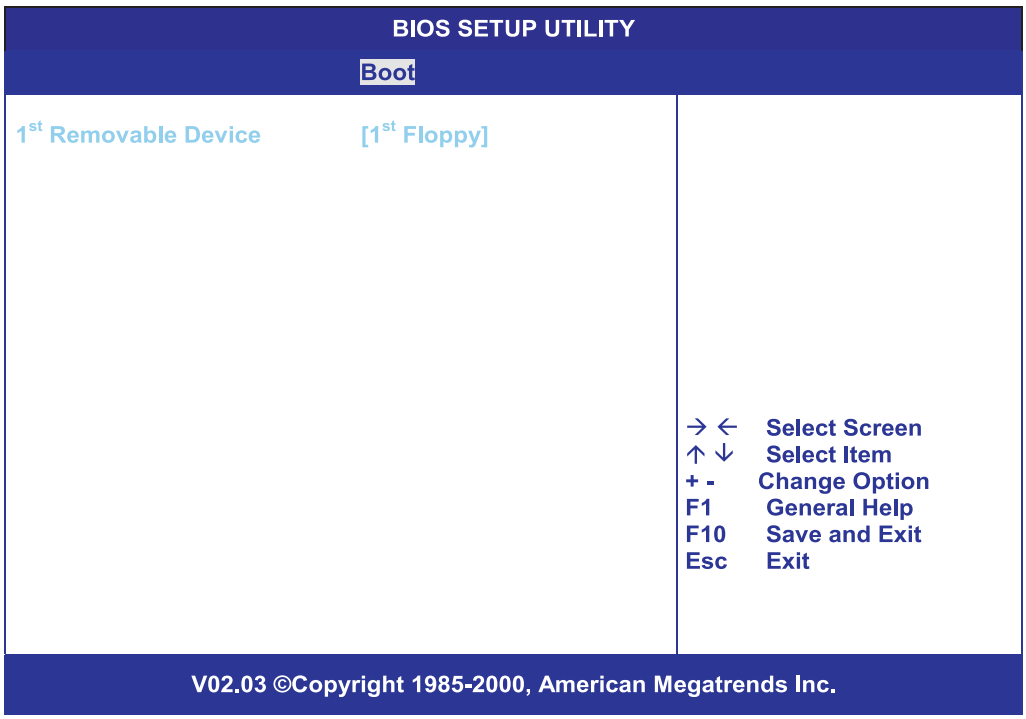
The Hard Disk Drives submenu lets you specify the devices that will be considered as the primary and secondary hard drives.



Parameter	Description
1st Hard Drive	Sets the device to be considered the primary hard drive.
2nd Hard Drive	Sets the device to be considered the secondary hard drive.

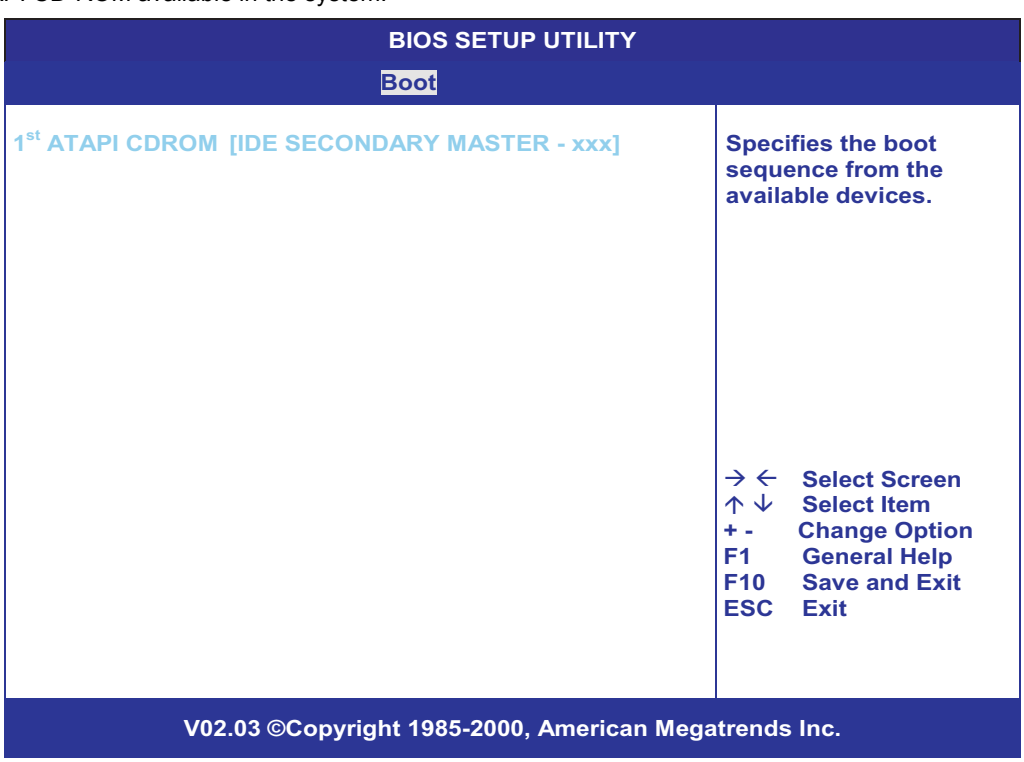
Removable Devices

The Removable Devices submenu displays the type of removable devices available in the system.



ATAPI CD-ROM Devices

The ATAPI (Advanced Technology Attachment Packet Interface) CD-ROM submenu displays the type of ATAPI CD-ROM available in the system.


BIOS SETUP UTILITY
Boot
1st ATAPI CDROM [IDE SECONDARY MASTER - xxx]
Specifies the boot sequence from the available devices.
→ ← Select Screen
↑ ↓ Select Item
+ - Change Option
F1 General Help
F10 Save and Exit
ESC Exit
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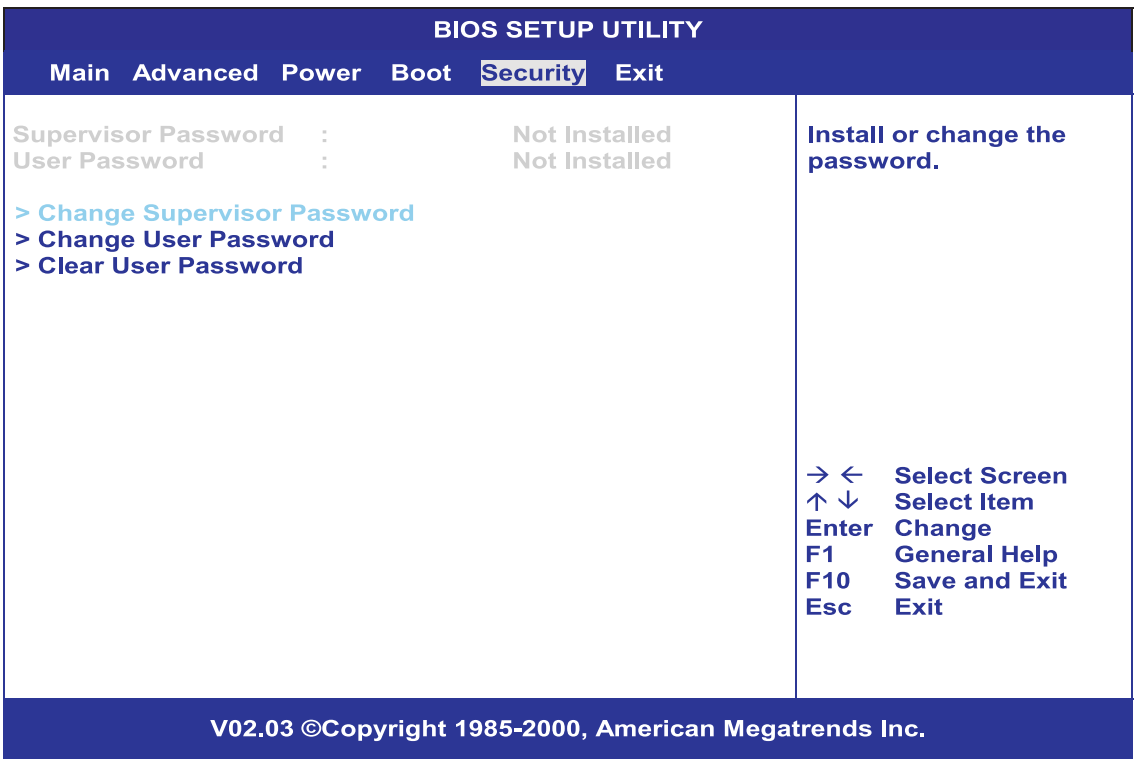
Security

The Security menu allows you to safeguard and protect the system from unauthorized use by setting up access passwords.


BIOS SETUP UTILITY
Main Advanced Power Boot Security Exit
Supervisor Password : Not Installed
User Password : Not Installed
> Change Supervisor Password
> Change User Password
> Clear User Password
Install or change the password.
→ ← Select Screen
↑ ↓ Select Item
Enter Change
F1 General Help
F10 Save and Exit
Esc Exit
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Parameter	Description	Option
Supervisor Password	Prevents unauthorized access to the BIOS setup.	**Not Installed** Installed
User Password	Secures your system against unauthorized use. Once you set this password, you have to type it whenever you boot the system. User password is available only when a Supervisor password is set.	**Not Installed** Installed
Change User Password	Press **Enter** to change the User password.	
Change Supervisor Password	Press **Enter** to change the Supervisor password.	
Clear User Password	Press **Enter** to remove the User password.	

To set a Supervisor/User Password

1. Use the up/down keys to highlight a password parameter (Supervisor Password or User Password) then press **Enter**.
   A password box will appear.
2. Type a password then press **Enter**.
   The password may consist of up to six alphanumeric characters (A-Z , a-z , 0-9).
3. Retype the password to verify the first entry then press **Enter** again.

After setting the password, the system automatically sets the chosen password parameter to installed.

To change the Supervisor/User password

1. Use the up/down keys to highlight either change password parameters (Change Supervisor Password or Change User Password) then press **Enter**.
2. Type the original password then press **Enter**.
3. Type a new password then press **Enter**.
4. Retype the password to verify the first entry then press **Enter** again.

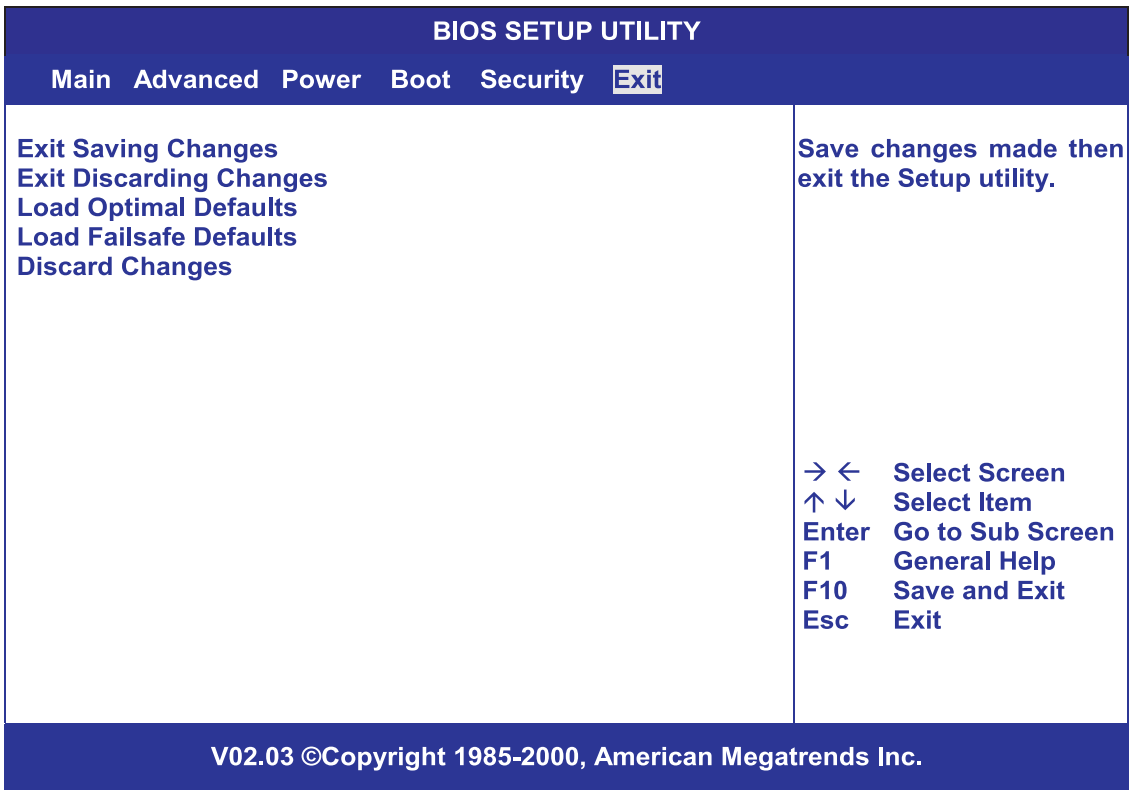
To remove the User password

1. Use the up/down keys to highlight the Clear User Password parameter then press **Enter**.
2. Enter the current password then press **Enter**.
3. Press **Enter** twice without entering anything in the new and confirm password fields.

After doing this, the system automatically sets the User password parameter to Not Installed.

Exit

The Exit menu displays the various options to quit from the BIOS setup. Highlight any of the exit options then press **Enter**.



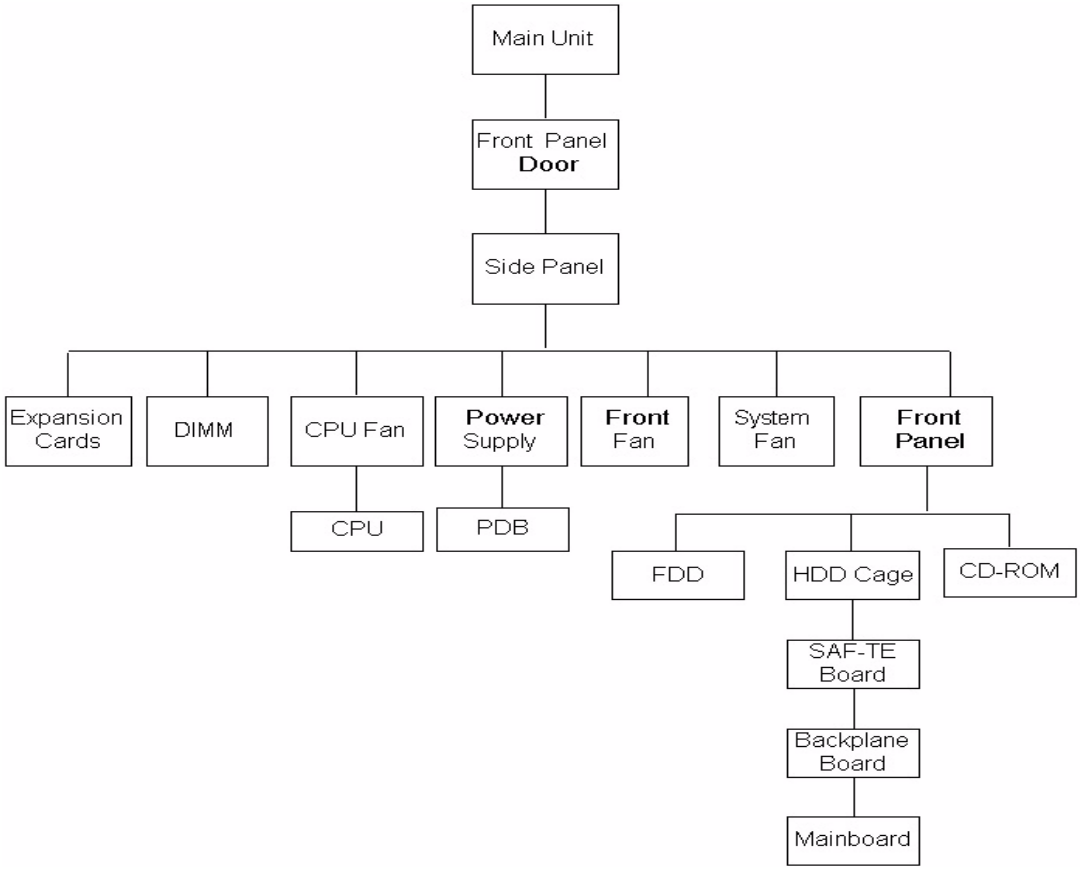
Parameter	Description
Exit Saving Changes	Saves changes made and close the BIOS setup
Exit Discarding Changes	Discards changes made and close the BIOS setup
Load Optimal Defaults	Loads the optimal settings for all BIOS setup parameters. Optimal settings are quite demanding in terms of resources consumption. If you are using low-speed memory chips or other kinds of lower-performance components and you choose to load these settings, the system might not function properly.
Load Failsafe Defaults	Loads the failsafe settings for all BIOS parameters. Failsafe settings, compared to the optimal settings, are not quite as demanding in terms of resoureces consumption so you can be sure to have a stable system performance even if you are using low-grade components.
Discard Changes	Discards all changes made on the BIOS setup.

Machine Disassembly and Replacement

This chapter contains step-by-step procedures on how to disassemble the server system for maintenance and troubleshooting.

NOTE: The screws for the different components vary in size. During the disassembly process, group the screws with the corresponding components to avoid mismatch when putting back the components.

Disassembly FlowChart



General Information

Before You Begin

Before proceeding with the disassembly procedure, make sure that you do the following:

1. Turn off the power to the system and all peripherals.
2. Unplug the AC adapter and all power and signal cables from the system.
3. Open the system according to the instruction.
4. Follow the ESD precautions described in this section when handling a server component.
5. Remove any expansion board(s) or peripheral(s) that block access to the DIMM socket or other components connector.

ESD Precautions

Electrostatic discharge (ESD) can damage the processors, motherboard, disk drives, expansion boards, or other components. Always observe the following precautions before you exchange a server component:

1. Do not remove a component from its protective packaging until you are ready to install it.
2. Wear a wrist grounding strap and attach it to a metal part of the server before handling components. If a wrist strap is not available, maintain contact with the server throughout any procedure requiring ESD protection.

Post-installation instructions

Observe the following after installing a server component:

1. See to it that all components are installed according to the described step-by-step instructions.
2. Reinstall any expansion board(s) or periphera(s) that you have previously removed.
3. Reinstall the air baffle.
4. Reinstall the chassis panels.
5. Connect the necessary cables.
6. Turn on the system.

CAUTION: After completing the component upgrade/replacement procedures, do not forget to reinstall the air baffle before replacing the chassis panels. Failure to do so will reduce the system's cooling efficiency which can adversely affect performance or cause damage due to overheating.

Opening the Housing Panels

CAUTION: Before you proceed, make sure that you have turned off your computer and all peripherals connected to it.

Opening the Front Panel door

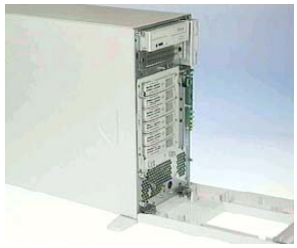
A security lock secures the front door to protect against unauthorized access.

To open the front door:

1. Insert the key into the lock and turn it clockwise until it points to the unlocked icon.
2. Pull open the front panel door.

Removing the Front Bezel

1. Simultaneously slide the thumb catches at the top.
2. Then push down to release the latches.



3. Open the panel 90 degrees, until it is perpendicular to the chassis.
4. Gently pull the inner panel away from the chassis.

Removing the Side Panel

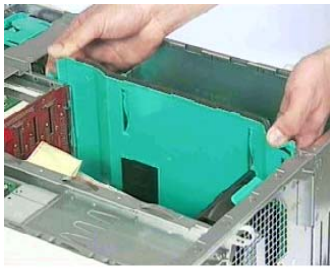
1. Loosen the three thumb screws located at the end of the left panel closest to the front panel.
2. Slide the left panel slightly forward then upward before detaching it from the chassis.

Opening the Server

To remove the air baffle

Remove the air baffle to allow easy access to the motherboard and system components.

1. Press the release latches on both ends of the air baffle.
2. Pull out the air baffle to remove it from the chassis.

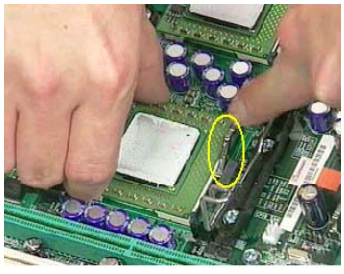
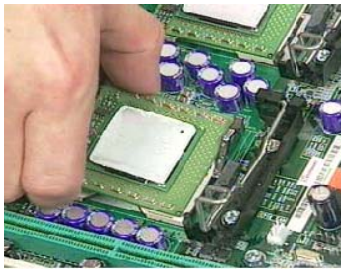


To remove the Rear Fan

1. Unplug all cables from the rear fan.
2. Lift up the rear fan and release it from the chassis.

To remove the Heatsink

1. Depress then lift up each of the locking levers to a 90 angle.
2. Remove both heatsinks.
3. Lift up the CPU locking lever until it is fully extended and pull it from the socket.

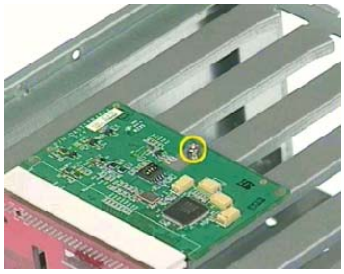
To remove the HDD Cage

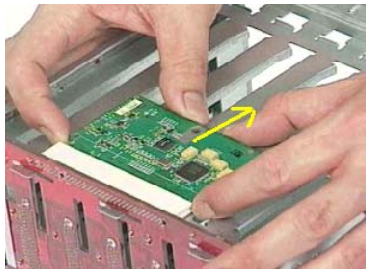
1. Loosen the four thumb screws as shown here to release the HDD cage.
2. Slightly pull out the cage from the housing.

3. Pull out the hard disk carrier from the cage.
4. Loosen the two screws on both side to release the hard disk from the carrier.
5. Then pull the hard disk unit from the carrier.

To remove the Safety Board

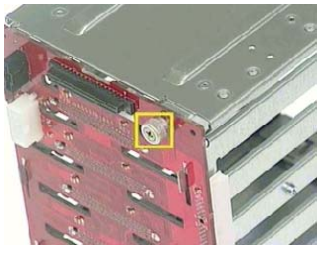
1. Loosen the one screw shown here to release the hard disk safety board.
2. Then pull the hard disk safety board from its position.





To remove the Backplane Board

1. Loosen the one thumb screw to release the hard disk backplane board.
2. Pull the hard disk backplane board from rear of the cage.



To remove the CD-ROM

1. Loosen and remove the two screws from each side of the CD-ROM drive before pulling it from the chassis.

To remove the Floppy

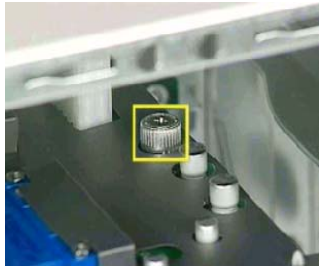
Pull the floppy unit from the chassis.

To remove the Power Supply

Grasp the handle bar to pull the power supply from the chassis.

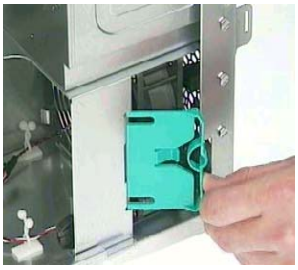
To remove the PDB

1. Loosen the thumb screw as highlight.
2. Then pull the power supply PDB from the chassis.



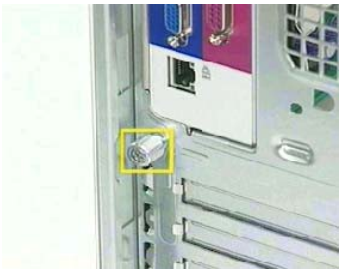
To remove the Front Fan

Open the front fan door then pull the front fan module away.



To remove the Mainboard

1. Unscrew the thumb screw in the rear of the chassis to release the mainboard.
2. Then push backward to release and pull the mainboard from the chassis.



To remove the LED

Unscrew the one screw to release the LED then take the LED away.

Troubleshooting

This chapter provides troubleshooting information for the Altos G510:

1. AMIBIOS POST Checkpoint Codes
   a. Uncompressed Initialization Codes
   b. Bootblock Recovery Codes
   c. Uncompressed Initialization Codes
2. Bus Checkpoint Codes
3. AMIBIOS Beep Codes

AMIBIOS POST Checkpoint Codes

When AMIBIOS performs the Power On Self Test, it writes diagnostic codes checkpoint codes to I/O port 0080h. If the computer cannot complete the boot process, diagnostic equipment can be attached to the computer to read I/O port 0080h.

Uncompressed Initialization Codes

The uncompressed initialization checkpoint codes are listed in order of execution:

Checkpoint Code	Description
D0h	The NMI is disabled. Power on delay is starting. Next, the initialization code checksum will be verified.
D1h	Initializing the DMA controller, performing the keyboard controller BAT test, starting the memory refresh, and entering 4 GB flat mode next.
D3h	Starting memory sizing next.
D4h	Returning to real mode. Executing any OEM patches and setting the stack next.
D5h	Passing control to the uncompressed code in shadow RAM at E000:0000h. The initialization code is copied to segment 0 and control will be transferred to segment 0.
D6h	Control is in segment 0. Next, checking if <Ctrl> <Home> was pressed and verifying the system BIOS checksum. If either < Ctrl ><Home> was pressed or the system BIOS checksum is bad, next will go to checkpoint code E0h. Otherwise, going to checkpoint code D7h.

Bootblock Recovery Codes

The bootblock recovery checkpoint codes are listed in order of execution:

Checkpoint Code	Description
E0h	The onboard floppy controller if available is initialized. Next, beginning the base 512KB memory test.
E1h	Initializing the interrupt vector table next.
E2h	Initializing the DMA and Interrupt controllers next.
E6h	Enabling the floppy drive controller and Timer IRQs. Enabling internal cache memory.
Edh	Initializing the floppy drive.
Eeh	Looking for a floppy diskette in drive A:. Reading the first sector of the diskette.
Efh	A read error occurred while reading the floppy drive in drive A:.
F0h	Next, searching for the AMIBOOT.ROM file in the root directory.

Checkpoint Code	Description
F1h	The AMIBOOT.ROM file is not in the root directory.
F2h	Next, reading and analyzing the floppy diskette FAT to find the clusters occupied by the AMIBOOT.ROM file.
F3h	Next, reading the AMIBOOT.ROM file, cluster by cluster.
F4h	The AMIBOOT.ROM file is not the correct size.
F5h	Next, disabling internal cache memory.
FBh	Next, detecting the type of flash ROM.
FCh	Next, erasing the flash ROM.
FDh	Next, programming the flash ROM.
FFh	Flash ROM programming was successful. Next, restarting the system BIOS.

Uncompressed Initialization Codes

The following runtime checkpoint codes are listed in order of execution. These codes are uncompressed in F0000h shadow RAM.

Checkpoint Code	Description
03h	The NMI is disabled. Next, checking for a soft reset or a power on condition.
05h	The BIOS stack has been built. Next, disabling cache memory.
06h	Uncompressing the POST code next.
07h	Next, initializing the CPU and the CPU data area.
08h	The CMOS checksum calculation is done next.
0Ah	The CMOS checksum calculation is done. Initializing the CMOS status register of date and time next.
0Bh	The CMOS status register is initialized. Next, performing any required initialization before the keyboard BAT command is issued.
0Ch	The keyboard controller input buffer is free. Next, issuing the BAT command to the keyboard controller.
0Eh	The keyboard controller BAT command result has been verified. Next, performing any necessary initialization after the keyboard controller BAT command test.
0Fh	The initialization after the keyboard controller BAT command test is done. The keyboard command byte is written next.
10h	The keyboard controller command byte is written. Next, issuing the Pin23 and 24 blocking and unblocking command.
11h	Next, checking if <End> or <Ins> keys were pressed during power on. Initializing CMOS RAM if the Initialize CMOS RAM in every boot AMIBIOS POST option was set in AMIBCP or the <End> key was pressed.
12h	Next, disabling DMA controllers 1 and 2 and interrupt controllers 1 and 2.
13h	The video display has been disabled. Port B has been initialized. Next, initializing the chipset.
14h	the 8254 timer test will begin next.
19h	The 8254 timer test is over. Starting the memory refresh test next.
1Ah	The memory refresh line is toggling. Checking the 15 second on/off time next.

Checkpoint Code	Description
23h	Reading the 8042 input port and disabling the MEGAKEY Green PC feature next. Making the BIOS code segment writable and performing any necessary configuration before initializing the interrupt vectors.
24h	The configuration required before interrupt vector initialization has completed. Interrupt vector initialization is about to begin.
25h	Interrupt vector initialization is done. Clearing the password if the POST DIAG switch is on.
27h	Any initialization before setting video mode will be done next.
28h	Initialization before setting the video mode is complete. Configuring the monochrome mode and color mode settings next.
2Ah	Bus initialization system, static, output devices will be done next, if present.
2Bh	Passing control to the video ROM to perform any required configuration before the video ROM test.
2Ch	All necessary processing before passing control to the video ROM is done. Looking for the video ROM next and passing control to it.
2Dh	The video ROM has returned control to BIOS POST. Performing any required processing after the video ROM had control.
2Eh	Completed post-video ROM test processing. If the EGA/VGA controller is not found, performing the display memory read/write test next.
2Fh	The EGA/VGA controller was not found.The display memory read/write test is about to begin.
30h	The display memory read/write passed. Look for retrace checking next.
31h	The display memory read/write test or retrace checking failed. Performing the alternate display memory read/write test next.
32h	The alternate display memory read/write test passed. Looking for alternate display retrace checking next.
34h	Video display checking is over. Setting the display mode next.
37h	The display mode is set. Displaying the power on message next.
38h	Initializing the bus input, IPL, general devices next, if present.
39h	Displaying bus initialization error messages.
3Ah	The new cursor position has been read and saved. Displaying the hit < DEL > message next.
3Bh	The hit <DEL > message is displayed. The protected mode memory test is about to start.
40h	Preparing the descriptor tables next.
42h	The descriptor tables are prepared. Entering protected mode for the memory test next.
43h	Entered protected mode. Enabling interrupts for diagnostics mode test.
44h	Interrupts enabled if the diagnostics switch is on. Initializing data to check memory wraparound at 0:0 next.
45h	Data initialized. Checking for memory wraparound at 0:0 and finding the total system memory size next.
46h	The memory wraparound test is done. Memory size calculation has been done. Writing patterns to test memory next.
47h	The memory pattern has been written to extended memory. Writing patterns to the base 640KB memory next.

Checkpoint Code	Description
48h	Patterns written in base memory. Determining the amount of memory below 1MB next.
49h	The amount of memory below 1MB has been found and verified. Determining the amount of memory above 1MB memory test.
4Bh	The amount of memory above 1Mb has been found and verified. Checking for a soft reset and clearing the memory below 1MB for the soft reset next. If this is a power on situation, going to checkpoint 4Eh next.
4Ch	The memory below 1MB has been cleared via a soft reset. Clearing the memory above 1MB next.
4Dh	The memory above 1MB has been cleared via a soft reset. Saving the memory size next. Going to checkpoint 52h next.
4Eh	The memory test started, but not as the result of a soft reset. Displaying the first64KB memory size next.
4Fh	The memory size display has started. The display is updated during the memory test. Performing the sequential and random memory test next.
50h	The memory below 1 MB has been tested and initialized. Adjusting the displayed memory size for relocation and shadowing next.
51h	The memory size display was adjusted for relocation and shadowing. Testing the memory above 1MB next.
52h	The memory above 1MB has been tested and initialized. Saving the memory size information next.
53h	The memory size information and the CPU registers are saved. Entering real mode next.
54h	Shutdown was successful. The CPU is in real mode. Disabling the Gate A20 line, parity, and the NMI next.
57h	The A20 address line, parity, and the NMI are disabled. Adjusting the memory size depending on relocation and shadowing next.
58h	The memory size was adjusted for relocation and shadowing. Clearing the Hit < DEL> message next.
59h	The Hit < DEL > message is cleared. The < WAIT...> message is displayed. Starting the DMA and interrupt controller test next.
60h	The DMA page register test passed. Performing the DMA Controller 1 base register test next.
62h	The DMA controller 1 base register test passed. Performing the DMA controller 2 base register test next.
65h	The DMA controller 2 base register test passed. Programming DMA controllers 1 and 2 next.
66h	Completed programming DMA controllers 1 and 2. Initializing the 8259 interrupt controller next.
67h	Completed 8259 interrupt controller initialization.
7Fh	Extended NMI source enabling is in progress.
80h	The keyboard test has started. Clearing the output buffer and checking for stuck keys. Issuing the keyboard reset command next.
81h	A keyboard reset error or stuck key was found. Issuing the keyboard controller interface test command next.
82h	The keyboard controller interface test completed. Writing the command byte and initializing the circular buffer next.

Checkpoint Code	Description
83h	The command byte was written and global data initialization has completed. Checking for a locked key next.
84h	Locked key checking is over. Checking for a memory size mismatch with CMOS RAM data next.
85h	The memory size check is done. Displaying a soft error and checking for a password or bypassing WINBIOS Setup next.
86h	The password was checked. Performing any required programming before WINBIOS setup next.
87h	The programming before WINBIOS Setup has completed. Uncompressing the WINBIOS Setup code and executing the AMIBIOS Setup or WINBIOS Setup utility next.
88h	Returned from WINBIOS Setup and cleared the screen. Performing any necessary programming after WINBIOS Setup next.
89h	The programming after WINBIOS Setup has completed. Displaying the power on screen message next.
8Bh	The first screen message has been displayed. The <WAIT...> message is displayed. Performing the PS/2 mouse check and extended BIOS data area allocating check next.
8Ch	Programming the WINBIOS Setup options next.
8Dh	The WINBIOS Setup options are programmed. Resetting the hard disk controller next.
8Fh	The hard disk controller has been reset. Configuring the floppy drive controller next.
91h	The floppy drive controller has been configured. Configuring the hard disk drive controller next.
95h	Initializing the bus option ROMs from C800 next.
96h	Initializing before passing control to the adapter ROM at C800.
97h	Initialization before the C800 adapter ROM gains control has completed. The adaptor ROM check is next.
98h	The adaptor ROM had control and has now returned control to BIOS POSt. Performing any required processing after the option ROM returned control.
99h	Any initialization required after the option ROM test has completed. Configuring the timer data area and printer base address next.
9Ah	Set the timer and printer base address. Setting the RS-232 base address next.
9Bh	Returned after setting the RS-232 base address. Performing any required initialization before the Coprocessor test next.
9Ch	Required initialization before the Coprocessor test is over. Initializing the Coprocessor next.
9Dh	Coprocessor initialized.Performing any required initialization after the Coprocessor test next.
9Eh	Initialization after the Coprocessor test is complete. Checking the extended keyboard, keyboard ID, and Num Lock key next. Issuing the keyboard ID command next.
A2h	Displaying any soft errors next.
A3h	The soft error display has completed. Setting the keyboard typematic rate next.
A4h	The keyboard typematic rate is set. Programming the memory wait states next.

Checkpoint Code	Description
A5h	Memory wait state programming is over. Clearing the screen and enabling parity and the NMI next.
A7h	NMI and parity enabled. Performing any initialization required before passing control to the adaptor ROM at E000 next.
A8h	Initialization before passing control to the adaptor ROM at E000h completed. Passing control to the adaptor ROM at E000h next.
A9h	Returned from adaptor ROM at E000h control. Performing any initialization required after the E000 option ROM had control next.
Aah	Initialization after E000 option ROM control has completed. Displaying the system configuration next.
Abh	Uncompressing the DMI data and executing DMI POST initialization next.
B0h	The system configuration is displayed.
B1h	Copying any code to specific areas.
00h	Code copying to specific areas is done. Passing control to INT 19h boot loader next.

Bus Checkpoint Codes

The system BIOS pases control to different buses at the following checkpoints:

Checkpoint Code	Description
2Ah	Initializing the different bus system,static,and output devices, if present.
38h	Initialized bus input, IPL, and general devices, if present.
39h	Displaying bus initialization error messages, if any.
95h	Initializing bus adaptor ROMs from C8000h through D8000h.

Additional Bus Checkpoints

While control is inside the different bus routines, additional checkpoints are output to I/O port address 0080h as word to identify the routines being executed.

These are word checkpoints. The low byte of checkpoint is the system BIOS checkpoint where control is passed to the different bus routines.

The high byte of checkpoint indicates that the routine is being executed in different buses.

High Byte

Bits	Description
Bits 7-4	0000 Function0. Disable all devices on the bus. 0001 Function1. Initialize static devices on the bus. 0010 Function2. Initialize output devices on the bus. 0011 Function3. Initialize input devices on the bus. 0100 Function4. Initialize IPL devices on the bus. 0101 Function 5. Initialize general devices on the bus. 0110 Function 6. Initialize error reporting on the bus. 0111 Function 7. Initialize add-on ROMs for all buses.
Bits 3-0	Specify the bus 0 Generic DIM Device Initialization Manager. 1 Onboard System devices. 2 ISA devices 3 EISA devices 4 ISA PnP devices 5. PCI devices

AMIBIOS Beep Codes

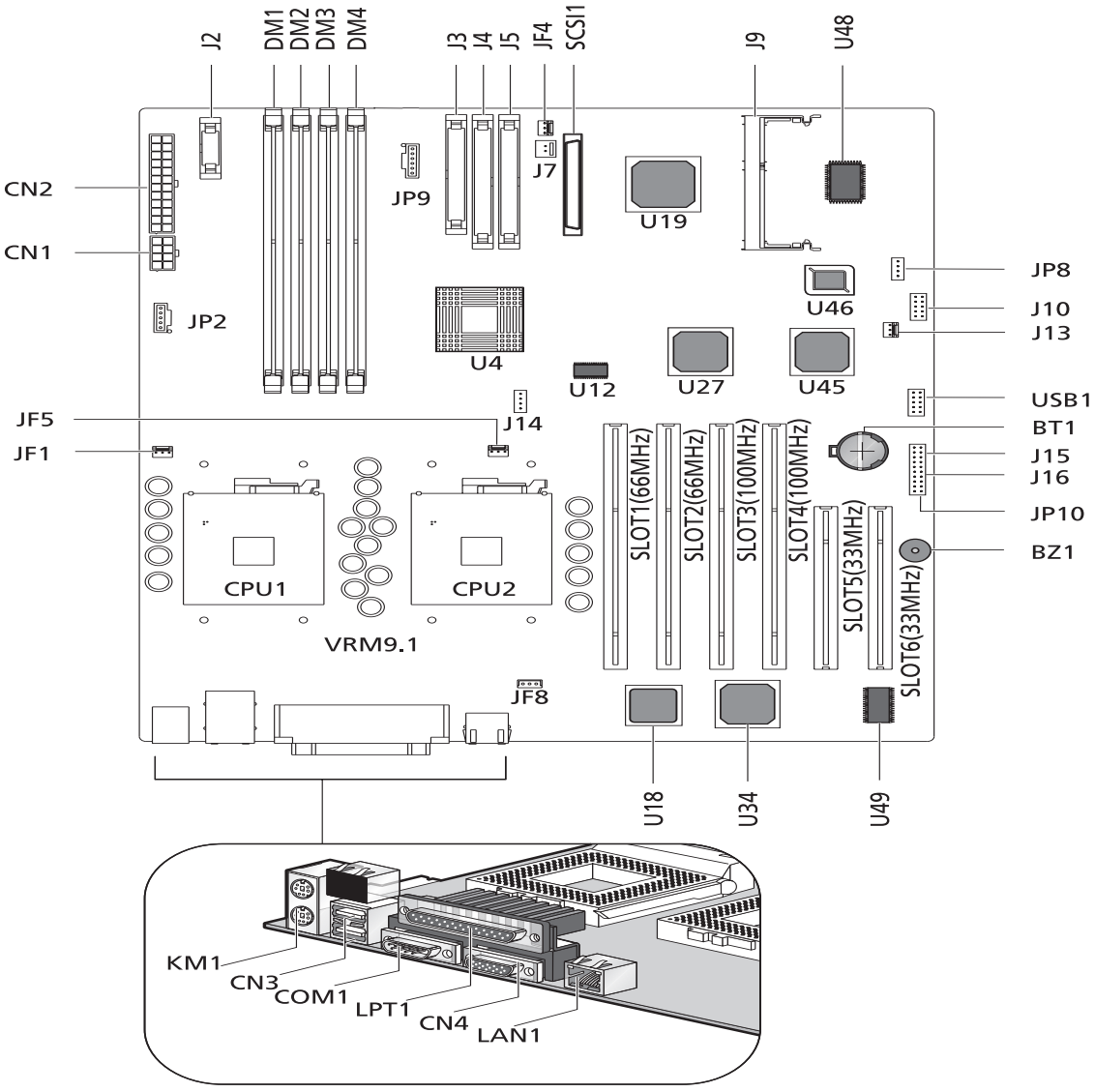
Except for beep code #8, these codes are always fatal.

Beep	Description
1 beep	Refresh failure
2 beeps	Parity error
3 beeps	Base 64K memory failure
4 beeps	Timer not operational
5 beeps	Processor error
6 beeps	8042-gate A20 failure
7 beeps	Processor exception interrupt error
8 beeps	Display memory read/write failure
9 beeps	ROM checksum error
10 beeps	CMOS shutdown register read/write error
11 beeps	Cache memory bad
For 1 beep, 2 beeps, or 3 beeps try reseating the memory first. If the error still occurs, replace the memory with known good chips.	
For 4 beeps, 5 beeps, 7 beeps, or 10 beeps the system board must be sent in for repair.	
For 6 beeps try reseating the keyboard controller chip. If the error still occurs, replace the keyboard chip. If the error persists, check parts of the system relating to the keyboard, e.g. try another keyboard, check to see if the system has a keyboard fuse.	
8 beeps indicate a memory error on the video adapter. Replace the video card or the memory on the video card.	
9 beeps indicate faulty BIOS chip(s). It is not likely that this error can be corrected by reseating the chips. Consult the motherboard supplier or an AMI product distributor for replacement part(s).	
If no beeps are heard and no display in on the screen. The first thing to check is the power supply. Connect an LED to the POWER LED connection on the motherboard. If this LED lights and the drive(s) spin up then the power supply will usually be good.	
Next, inspect the motherboard for loose components. A loose or missing CPI, BIOS chip, Crystal Oscillator, or Chipset chip will cause the motherboard not to function.	
Next, eliminate the possibility of interference by a bad or improperly set up I/O card by removing all card except the video adapter. The system should at least power up and wait for a drive time-out. Insert the cards back into the system one at a time until the problem happens again. When the system does nothing, the problem will be with the last expansion card that was put in.	
If the above suggestions fail to cause any change in the disfunction of the system, the motherboard must be returned for repair.	

Jumper and Connector Information

Jumpers and Connectors

The following figure shows the jumper and connector locations on the system board:



Connector & LED

USB1: USB Port Header (Option)

Pin No.	Description
1.	USB Power
3.	USBP2-
5.	USBP2+
7.	GND
9.	NC
2.	USB Port
4.	USBP3-
6.	USBP3+
8.	GND
10.	Key

Pin No.	Item	Description
JF1	CPU 1 FAN	Controlled and sensed by BMC/ADM 1026
JF4	System Front FAN	Controlled and sensed by BMC/ADM 1026
JF5	CPU 2 FAN	Controlled and sensed by BMC/ADM 1026
JF8	System Back FAN	Controlled and sensed by BMC/ADM 1026

FAN Pin Out

Pin No.	Description
1.	GND
2.	Power
3.	Sense Pulse

ITP CONN.

Pin No.	Description
JP1	ITP Setting 1P : 2-3 2P : NI
JP9	SCSI Backplane Connector

J2: Front Panel CONN.

Pin No.	Description	Pin No.	Description
1.	Power LED	2.	Key
3.	GND	4.	HDD Fail LED
5.	System Fault LED	6.	3V_STBY
7.	Reset Button	8.	Power Button
9.	VCC5	10.	HDD Active LED

Battery

Name	Description
BT1	Battery (CR-2032) coin type

J13: WOL CONN

Pin No.	Description
1.	3V STBY
2.	GND
3.	WOL Active

J10: AMI Maga RAC CONN.

Pin No.	Description	Pin No.	Description
1.	RAC SMI#	2.	I^2C Clock
3.	GND	4.	GND
5.	Power On/Off	6.	I^2C Data
7.	3V Standby	8.	NC
9.	System Fault LED	10.	NC
11.	Reset	12.	GND
13.	GND	14.	Power Good
15.	Reserved	16.	GND
17.	Reserved	18.	NC
19.	NC	20.	RAC PRSNT#

JP8: IPMB CONN.

Pin No.	Description
1.	IPMB SDA
2.	GND
3.	IPMB SCL
4.	NC

J14: SCSI RAID Card HDD LED CONN

Pin No.	Description
1.	HDD LED Active Low
2.	NC
3.	NC
4.	HDD LED Active Low

J15: RAC Card Power-On CONN (The same location of JP10 pin 5, 3)

Pin No.	Description
1.	Power On/Off
2.	GND

J16: RAC Card Reset CONN (The same location of JP10 pin 11, 13)

Pin No.	Description
1.	Reset
2.	GND

Power Connector

CN2: SSI Power Connector

SSI Power Connector Pinout

Pin No.	Description	Pin No.	Description
1	+3.3V	13	+3.3V
2	+3.3V	14	-12V
3	GND	15	GND
4	+5V	16	-PS_ON
5	GND	17	GND
6	+5V	18	GND
7	GND	19	GND
8	Power OK	20	Reserve
9	+5V SB	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	+3.3V	24	GND

CN1: +12V Power Connector

E-Bay 12V Power Connector

Pin No.	Description	Pin No.	Description
1	GND	5	+12V
2	GND	6	+12V
3	GND	7	+12V
4	GND	8	+12V

LED Light

Item	Description
D2	Green : Standby Power On. Off : AC Off
D31~ D38	Message LED (Default use as 80 port LED)

Front Panel LED Status of LED Board

Pin No.	Item	Description
D1	Power LED	Green Light : DC ON Green Blinking : Suspend OFF : DC OFF
D2	HDD LED	Green Blinking : Access HDD OFF : Un-Access HDD
D3	System Fault LED	Amber Light : System Fault Occurred OFF : System Fault Un-Occurred
D4	HDD Fail LED	Amber Light : HDD Fault Occurred (TBD) OFF : HDD Fault Un-Occurred

MLB Jumper Setting

J10

Pin. No	Function	Default Setting	Description
1-2	Password Enable	OFF	ON: Enable Password OFF : Normal
3-4	Clear NVRAM	OFF	ON : Clear NVRAM OFF : Normal
5-6	Recovery Mode	OFF	ON : Recovery OFF : Normal

J12

Pin No.	Function	Default Setting	Description
1-2	Support ZCR Card / Intel RAIDIOS Card	ON	ON: Support ZCR Card (Default) OFF : Support Intel RAIDIOS Card
3-4	NC		

CPU Frequency Ratio Setting

System Bus-to-Core Frequency Ratio	Core Frequency
1/16	1.60 GHz
1/17	1.70 GHz
1/18	1.80 GHz
1/19	1.90 GHz
1/20	2 GHz
1/21	2.10 GHz
1/22	2.20 GHz
1/24	2.40 GHz

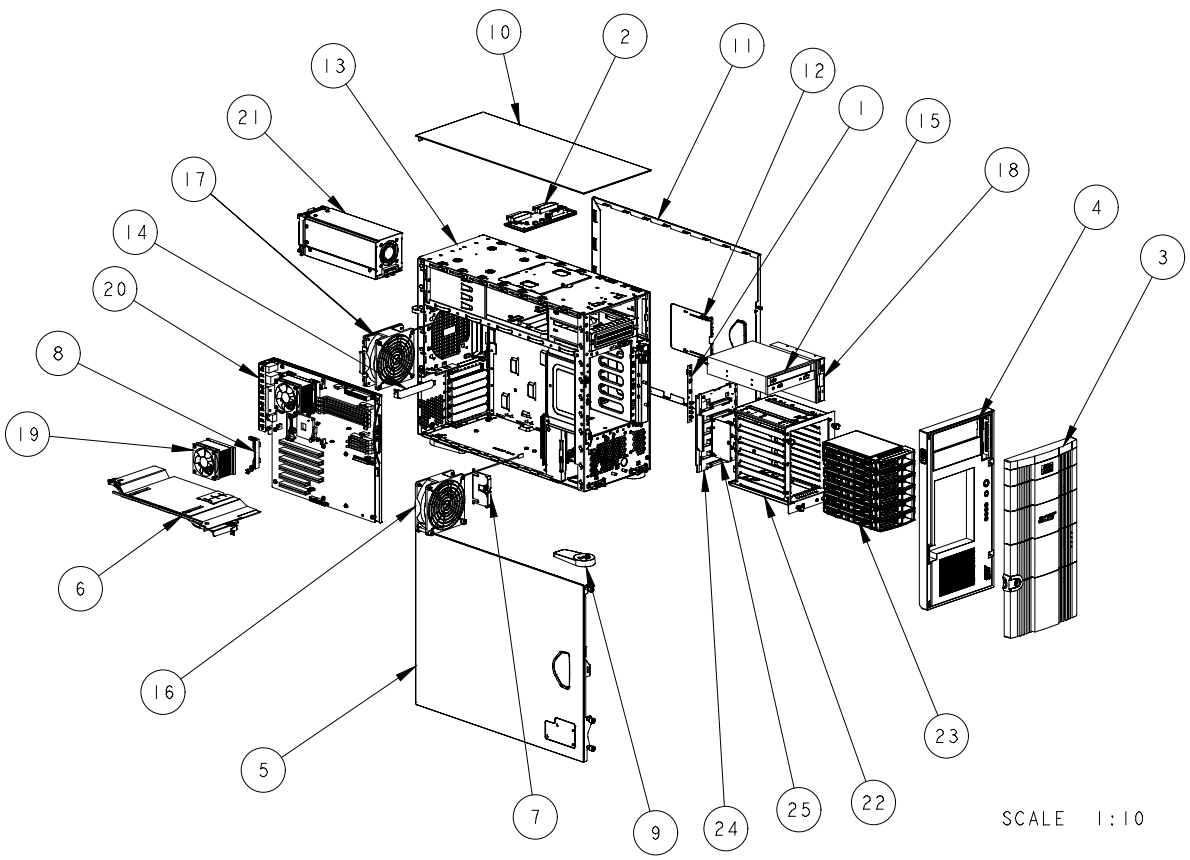
FRU (Field Replaceable Unit) List

This chapter gives you the FRU (Field Replaceable Unit) listing in global configurations of Acer Altos G510. Refer to this chapter whenever ordering for parts to repair or for RMA (Return Merchandise Authorization). Please note that WHENORDERING FRU PARTS, you should check the most up-to-date information available on your regional web or channel. For whatever reasons a part number change is made, it will not be noted on the printed Service Guide. For ACER AUTHORIZED SERVICE PROVIDERS, your Acer office may have a DIFFERENT part number code from those given in the FRU list of this printed Service Guide. You MUST use the local FRU list provided by your regional Acer office to order FRU parts for repair and service of customer machines.

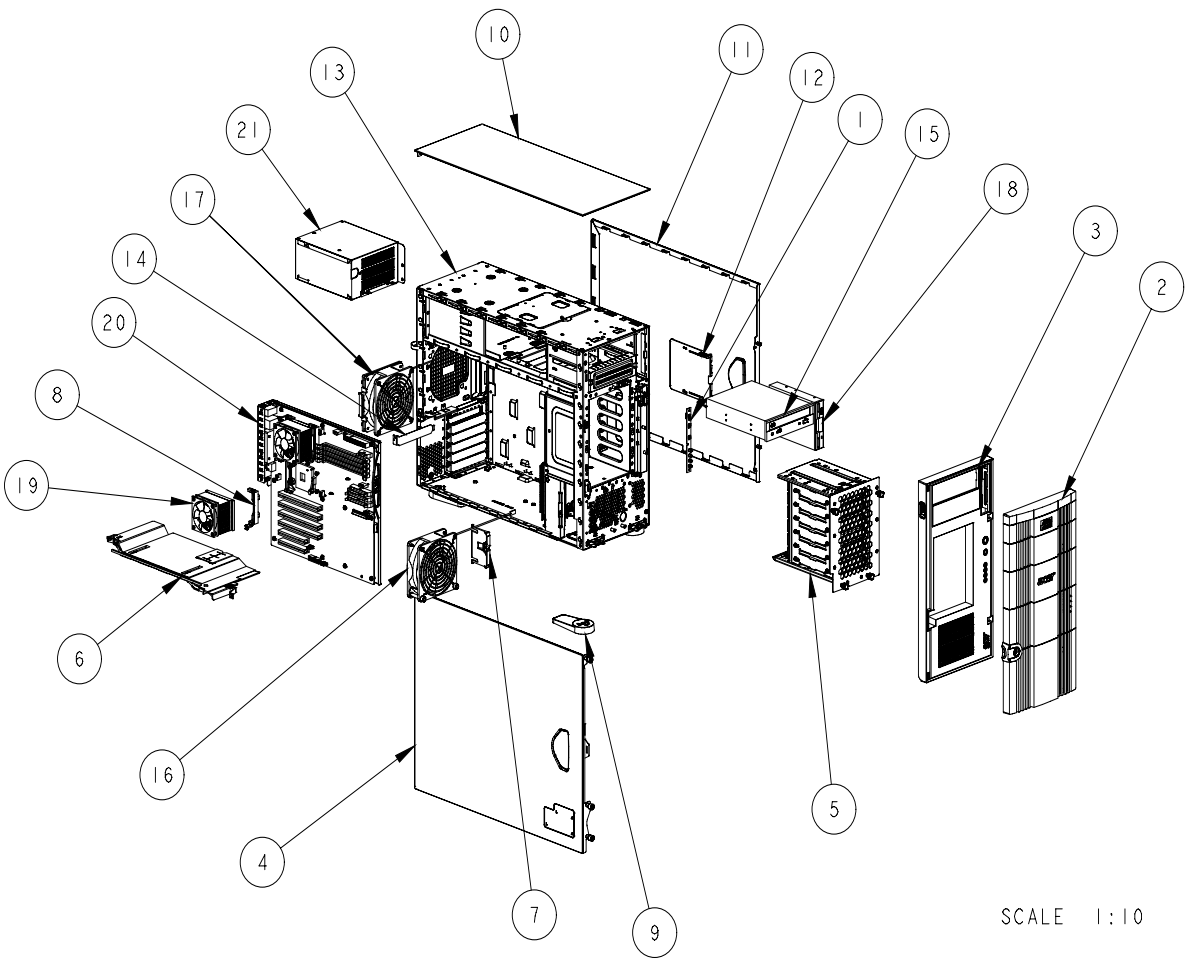
NOTE: To scrap or to return the defective parts, you should follow the local goverment ordinance or regulations on how to dispose it properly, or follow the rules set by your regional Acer office on how to return it.

Exploded Diagram

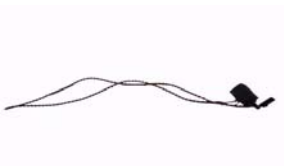
Full SKU.



Basic SKU.

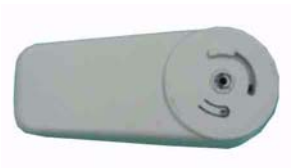


Picture	No.		Part Name	Part No.
	Full SKU	Basic SKU		
Board				
	1	1	LED Board G700 Refer to FULL/BASIC SKU Exploded Diagram No.	55.G70V7.003
	2		Power Distribution Board (PDB)	55.G51V7.001
	24		SCSI Backplane Board	55.G51V7.002
	25		SAF-TE Board G700	TA.G7001.001
Cable				
			SCSI Cable 8CON/68PIN	CA.G5101.001
			LED Cable (12PIC/10PIN)	50.G510V7.002

Picture	No.		Part Name	Part No.
	Full SKU	Basic SKU		
			Intrusion Switch Cable	50.G51V7.003
			Power Cable 20 PIN	50.G51V7.004
			Power Cable 24PIN	50.G51V7.005
			Power Cable 8PIN	50.G51V7.006
			Signal Cable	50.G51V7.007
			FDD Cable	50.G51V7.008

Picture	No.		Part Name	Part No.
	Full SKU	Basic SKU		
			Cable M/B-RAIDCARD 4PIN/ 4PIN	50.G51V7.014
			HDD Cable ATA-100 IDE	50.G51V7.010
			Fan Cable	50.G51V7.011
			Management Cable 6PIN	50.G51V7.012
			Power Cable 10PIN	50.G51V7.013
			SCSI Cable 2CON/68PIN	CA.G5101.002
Case				
	3	2	Outter Bezel W/I Name Plate, Lock and Key	42.G51V7.001

Picture	No.		Part Name	Part No.
	Full SKU	Basic SKU		
	4	3	Inner Bezel	42.G51V7.002
	5	4	Side Panel - Left W/I Quick Guide	60.G51V7.001
		5	Cable HDD Cage For G510 Basic SKU	TC.CAG01.005
	6	6	Air Duct	42.G51V7.003
	7	7	Front Fan Holder	42.G51V7.004
	8	8	Retension Module W/I 2 screws	42.G51V7.005

Picture	No.		Part Name	Part No.
	Full SKU	Basic SKU		
	9	9	Chassis Foot W/O screw	42.G51V7.006
	10	10	Top Cover	60.G51V7.002
	11	11	Side Panel - Right	60.G51V7.003
	12	12	FDD Tray	60.G70V7.008
	13	13	Altos G510 Chassis W/I Top, Left, Right Panel and feet	60.G51V7.004
	14	14	PCI Slot BKT	60.G51V7.005

Picture	No.		Part Name	Part No.
	Full SKU	Basic SKU		
			Hot Plug HDD Cage Module. Includes: 1. Hot Plug HDD Cage (P/N: 60.G51V7.006) 2. Plus 6pcs of HDD Tray (P/N:TZ.CAR02.001)	TC.CAG01.004
	22		Hot Plug HDD Cage	60.G51V7.006
	23		HDD Tray W/I 4 Screws	TZ.CAR02.001
CD-ROM Drive				
	15	15	CD-ROM 52X AOPEN/CD-952E	91.39D37.237
FAN				
	16	16	System Fan (Front) for G510	HI.G5102.001

Picture	No.		Part Name	Part No.
	Full SKU	Basic SKU		
	17	17	System Fan (Rear) for G510	HI.G5102.002
FDD				
	18	18	3 Mode FDD 1.44MB MITSUMI D353M3D-R694005	KF.35301.001
Heatsink				
	19	19	XEON CPU Heatsink W/I Fan	HI.G5102.003
Mainboard				
	20	20	Altos G510 Mainboard W/I MB Tray, 4 Retension Modules	MB.G5106.001
Power Supply				
	21		Redundant Power Supply 450W	PY.G7005.002

Picture	No.		Part Name	Part No.
	Full SKU	Basic SKU		
		21	450W Standard SPS For G510/ G700 Basic SKU	PY.45005.002

Model Definition and Configuration

The Altos G510 Model No. Define:

1. Trade Mark:

2. Brand Name: Acer
3. Description: Dual 604-pin sockets
4. Model No: G510
5. Product Name: Altos G510

Test Compatible Components

Altos G510 compatibility is tested and verified by Acer's internal testing department. All of its system functions are tested under Windows 2000 Server and Windows NET environment. In addition to these tests, the network communication functions are also tested under DOS6.22、Linux 7.3/8.0、Netware 6、Unixware 7.1.1、OpenServer 5.0.6 and NT4.0 environments.

Refer to the following lists for components, adapter cards, and peripherals which have passed these tests.

Microsoft Windows 2000 Server Environment Test

Items	Specifications
CPU	
Xeon 2.8GHz/ 533FSB/512KB	Prestonia, C1 stepping, FC-mPGAS2P/INT-m PGA,
Xeon 2.66GHz/533FSB/512KB	
Xeon 2.4GHz/533FSB/512KB	
Xeon 2.0GHz/533FSB/512KB	
Xeon 2.8GHz/400FSB/512KB	
Xeon 2.4GHz/400FSB/512KB	
Xeon 2.0GHz/400FSB/512KB	
Xeon 1.8GHz/400FSB/512KB	
DDR module (with ECC)	
1GB PC2100 DDR registered	Infineon DDR 64x4x36, (128x4x18 stacked) CL2, 1.2" HYB25D256400 BT-7/HYS72D128521GR-7-B
	Apacer DDR 64x4x36, (128x4x18 stacked) CL2, 1.2" Infineon HYB25D256400 BT-7
512MB PC2100 DDR registered	Infineon DDR 64x4x18 CL2, 1.2" HYB25D256400 BT-7/HYS72D64500GR-7-B
	Apacer DDR 64x4x18 CL2, 1.2" HYB25D256400 BT-7
256MB PC2100 DDR registered	Infineon DDR 32x8x9 CL2, 1.2" HYB25D256800 BT-7/HYS72D32500GR-7-B
	Apacer DDR 32x8x9 CL2, 1.2" Infineon HYB25D256800 BT-7
128MB PC2100 DDR registered	Apacer DDR 16x8x9 CL2 Infineon HYB25D128800 AT-7
SCSI RAID card	
ASRC/1Q 4ch Ultra160 RAID card, PCI	LSI Enterprise 1600, 64bit/66MHz Q12160A, i960RN 64/66, Battery Backup Unit & 128MB SDRAM f/w C170, W2K driver 5.25, Acer Altos CD 4.0
ASRC/1D 2ch Ultra160 RAID card, PC	LSI Elite 1600 64MB SDRAM, 64bit/66MHz PCI, i960RN, f/w C170, Acer Altos CD 4.0, W2k driver 5.25
	LSI Elite 1600 128MB with Battery back up, 64bit/66MHz PCI, i960RN, f/w C170, Acer Altos CD 4.0, W2k driver 5.25
ASRC/1S 1ch Ultra160 RAID card, PCI	LSI Express500 32/33Mhz PCI, i960RM-100, 32MB SDRAM, f/w C170, W2k driver 5.25, Acer Altos CD4.0
SCSI Card	
ASC/1D 2ch U160 SCSI card	U160 53C1010R 2ch, 64bit/66Mhz PCI-2.2 BIOS 4.19 with 7conn U160 SCSI cable/terminator, w/o SDMS CD4.8 for Altos

Items	Specifications
ASC/1S 1ch U160 SCSI card	U160 53C1000R 1ch, 64/66Mhz PCI-2.2, BIOS 4.19 with 7 conn U160 SCSI cable/terminator, w/o SDMS CD4.8 for Altos
SCSI Hard Drive (80 pin)	
146GB, U320, 10K RPM	Seagate Cheetah 146LP ST3146807LC f/w 0003
	IBM Daytona146Z10 IC35L146UCDY10, f/w S23C
73GB, U320, 10K RPM	Seagate Cheetah 146LP ST373307LC f/w 0003
	IBM Daytona146Z10 IC35L073UCDY10, f/w S23C
36GB, U320, 10K RPM	Seagate Cheetah 146LP ST336607LC f/w 0003
	IBM Daytona146Z10 IC35L036UCDY10, f/w S23C
18GB, U320, 10K RPM	IBM Daytona146Z10 IC35L018UCDY10, f/w S23C
SCSI Hard Drive (68 pin)	
146GB, U320, 10K RPM	Seagate Cheetah 146LP ST3146807LW f/w 0003
	IBM Daytona146Z10 IC35L146UWDY10, f/w S23C
73GB, U320, 10K RPM	Seagate Cheetah 146LP ST373307LW f/w 0003
	IBM Daytona146Z10 IC35L073UWDY10, f/w S23C
36GB, U320, 10K RPM	Seagate Cheetah 146LP ST336607LW f/w 0003
	IBM Daytona146Z10 IC35L036UWDY10, f/w S23C
18G, U320, 10K RPM	IBM Daytona146Z10 IC35L018UWDY10, f/w S23C
ATA Hard Drive	
120GB, ATA100 7200RPM	Seagate Cuda V "Avalanche" ST3120023A f/w 3.31
80GB, ATA100 7200RPM	Seagate Cuda V "Avalanche" ST380023A f/w 3.31
60GB, ATA100 7200RPM	Seagate Cuda V "Avalanche" ST360015A f/w 3.31
Redundant Power Supply	
Altos G700/510 redundant SPS	SPS 450W DELTA DPS450FBA Power Supply Unit

Microsoft Windows.NET Environment Test

Items	Specifications
CPU	
Xeon 2.8GHz/ 533FSB/512KB	Prestonia, C1 stepping, FC-mPGAS2P/INT-m PGA,
Xeon 2.66GHz/533FSB/512KB	
Xeon 2.4GHz/533FSB/512KB	
Xeon 2.0GHz/533FSB/512KB	
Xeon 2.8GHz/400FSB/512KB	
Xeon 2.4GHz/400FSB/512KB	
Xeon 2.0GHz/400FSB/512KB	
Xeon 1.8GHz/400FSB/512KB	
DDR module (with ECC)	
1GB PC2100 DDR registered	Infineon DDR 64x4x36, (128x4x18 stacked) CL2, 1.2" HYB25D256400 BT-7/HYS72D128521GR-7-B
	Apacer DDR 64x4x36, (128x4x18 stacked) CL2, 1.2" Infineon HYB25D256400 BT-7
512MB PC2100 DDR registered	Infineon DDR 64x4x18 CL2, 1.2" HYB25D256400 BT-7/HYS72D64500GR-7-B
	Apacer DDR 64x4x18 CL2, 1.2" HYB25D256400 BT-7
256MB PC2100 DDR registered	Infineon DDR 32x8x9 CL2, 1.2" HYB25D256800 BT-7/HYS72D32500GR-7-B
	Apacer DDR 32x8x9 CL2, 1.2" Infineon HYB25D256800 BT-7
128MB PC2100 DDR registered	Apacer DDR 16x8x9 CL2 Infineon HYB25D128800 AT-7
SCSI RAID card	
ASRC/1Q 4ch Ultra160 RAID card, PCI	LSI Enterprise 1600, 64bit/66MHz Q12160A, i960RN 64/66, Battery Backup Unit & 128MB SDRAM f/w C170, W2K driver 5.25, Acer Altos CD 4.0
ASRC/1D 2ch Ultra160 RAID card, PC	LSI Elite 1600 64MB SDRAM, 64bit/66MHz PCI, i960RN, f/w C170, Acer Altos CD 4.0, W2k driver 5.25
	LSI Elite 1600 128MB with Battery back up, 64bit/66MHz PCI, i960RN, f/w C170, Acer Altos CD 4.0, W2k driver 5.25
ASRC/1S 1ch Ultra160 RAID card, PCI	LSI Express500 32/33Mhz PCI, i960RM-100, 32MB SDRAM, f/w C170, W2k driver 5.25, Acer Altos CD4.0
SCSI Card	
ASC/1D 2ch U160 SCSI card	U160 53C1010R 2ch, 64bit/66Mhz PCI-2.2 BIOS 4.19 with 7conn U160 SCSI cable/terminator, w/o SDMS CD4.8 for Altos
ASC/1S 1ch U160 SCSI card	U160 53C1000R 1ch, 64/66Mhz PCI-2.2, BIOS 4.19 with 7 conn U160 SCSI cable/terminator, w/o SDMS CD4.8 for Altos

Items	Specifications
SCSI Hard Drive (80 pin)	
146GB, U320, 10K RPM	Seagate Cheetah 146LP ST3146807LC f/w 0003
	IBM Daytona146Z10 IC35L146UCDY10, f/w S23C
73GB, U320, 10K RPM	Seagate Cheetah 146LP ST373307LC f/w 0003
	IBM Daytona146Z10 IC35L073UCDY10, f/w S23C
36GB, U320, 10K RPM	Seagate Cheetah 146LP ST336607LC f/w 0003
	IBM Daytona146Z10 IC35L036UCDY10, f/w S23C
18GB, U320, 10K RPM	IBM Daytona146Z10 IC35L018UCDY10, f/w S23C
SCSI Hard Drive (68 pin)	
146GB, U320, 10K RPM	Seagate Cheetah 146LP ST3146807LW f/w 0003
	IBM Daytona146Z10 IC35L146UWDY10, f/w S23C
73GB, U320, 10K RPM	Seagate Cheetah 146LP ST373307LW f/w 0003
	IBM Daytona146Z10 IC35L073UWDY10, f/w S23C
36GB, U320, 10K RPM	Seagate Cheetah 146LP ST336607LW f/w 0003
	IBM Daytona146Z10 IC35L036UWDY10, f/w S23C
18G, U320, 10K RPM	IBM Daytona146Z10 IC35L018UWDY10, f/w S23C
ATA Hard Drive	
120GB, ATA100 7200RPM	Seagate Cuda V "Avalanche" ST3120023A f/w 3.31
80GB, ATA100 7200RPM	Seagate Cuda V "Avalanche" ST380023A f/w 3.31
60GB, ATA100 7200RPM	Seagate Cuda V "Avalanche" ST360015A f/w 3.31
Redundant Power Supply	
Altos G700/510 redundant SPS	SPS 450W DELTA DPS450FBA Power Supply Unit

DOS 6.22 Environment Test

Items	Specifications
CPU	
Xeon 2.8GHz/ 533FSB/512KB	Prestonia, C1 stepping, FC-mPGAS2P/INT-m PGA,
Xeon 2.66GHz/533FSB/512KB	
Xeon 2.4GHz/533FSB/512KB	
Xeon 2.0GHz/533FSB/512KB	
Xeon 2.8GHz/400FSB/512KB	
Xeon 2.4GHz/400FSB/512KB	
Xeon 2.0GHz/400FSB/512KB	
Xeon 1.8GHz/400FSB/512KB	
DDR module (with ECC)	
1GB PC2100 DDR registered	Infineon DDR 64x4x36, (128x4x18 stacked) CL2, 1.2" HYB25D256400 BT-7/HYS72D128521GR-7-B
	Apacer DDR 64x4x36, (128x4x18 stacked) CL2, 1.2" Infineon HYB25D256400 BT-7
512MB PC2100 DDR registered	Infineon DDR 64x4x18 CL2, 1.2" HYB25D256400 BT-7/HYS72D64500GR-7-B
	Apacer DDR 64x4x18 CL2, 1.2" HYB25D256400 BT-7
256MB PC2100 DDR registered	Infineon DDR 32x8x9 CL2, 1.2" HYB25D256800 BT-7/HYS72D32500GR-7-B
	Apacer DDR 32x8x9 CL2, 1.2" Infineon HYB25D256800 BT-7
128MB PC2100 DDR registered	Apacer DDR 16x8x9 CL2 Infineon HYB25D128800 AT-7
SCSI RAID card	
ASRC/1Q 4ch Ultra160 RAID card, PCI	LSI Enterprise 1600, 64bit/66MHz Q12160A, i960RN 64/66, Battery Backup Unit & 128MB SDRAM f/w C170, W2K driver 5.25, Acer Altos CD 4.0
ASRC/1D 2ch Ultra160 RAID card, PC	LSI Elite 1600 64MB SDRAM, 64bit/66MHz PCI, i960RN, f/w C170, Acer Altos CD 4.0, W2k driver 5.25
	LSI Elite 1600 128MB with Battery back up, 64bit/66MHz PCI, i960RN, f/w C170, Acer Altos CD 4.0, W2k driver 5.25
ASRC/1S 1ch Ultra160 RAID card, PCI	LSI Express500 32/33Mhz PCI, i960RM-100, 32MB SDRAM, f/w C170, W2k driver 5.25, Acer Altos CD4.0
SCSI Card	
ASC/1D 2ch U160 SCSI card	U160 53C1010R 2ch, 64bit/66Mhz PCI-2.2 BIOS 4.19 with 7conn U160 SCSI cable/terminator, w/o SDMS CD4.8 for Altos
ASC/1S 1ch U160 SCSI card	U160 53C1000R 1ch, 64/66Mhz PCI-2.2, BIOS 4.19 with 7 conn U160 SCSI cable/terminator, w/o SDMS CD4.8 for Altos

Items	Specifications
SCSI Hard Drive (80 pin)	
146GB, U320, 10K RPM	Seagate Cheetah 146LP ST3146807LC f/w 0003
	IBM Daytona146Z10 IC35L146UCDY10, f/w S23C
73GB, U320, 10K RPM	Seagate Cheetah 146LP ST373307LC f/w 0003
	IBM Daytona146Z10 IC35L073UCDY10, f/w S23C
36GB, U320, 10K RPM	Seagate Cheetah 146LP ST336607LC f/w 0003
	IBM Daytona146Z10 IC35L036UCDY10, f/w S23C
18GB, U320, 10K RPM	IBM Daytona146Z10 IC35L018UCDY10, f/w S23C
SCSI Hard Drive (68 pin)	
146GB, U320, 10K RPM	Seagate Cheetah 146LP ST3146807LW f/w 0003
	IBM Daytona146Z10 IC35L146UWDY10, f/w S23C
73GB, U320, 10K RPM	Seagate Cheetah 146LP ST373307LW f/w 0003
	IBM Daytona146Z10 IC35L073UWDY10, f/w S23C
36GB, U320, 10K RPM	Seagate Cheetah 146LP ST336607LW f/w 0003
	IBM Daytona146Z10 IC35L036UWDY10, f/w S23C
18G, U320, 10K RPM	IBM Daytona146Z10 IC35L018UWDY10, f/w S23C
ATA Hard Drive	
120GB, ATA100 7200RPM	Seagate Cuda V "Avalanche" ST3120023A f/w 3.31
80GB, ATA100 7200RPM	Seagate Cuda V "Avalanche" ST380023A f/w 3.31
60GB, ATA100 7200RPM	Seagate Cuda V "Avalanche" ST360015A f/w 3.31
Redundant Power Supply	
Altos G700/510 redundant SPS	SPS 450W DELTA DPS450FBA Power Supply Unit

Linux 7.3/8.0 Environment Test

Items	Specifications
CPU	
Xeon 2.8GHz/ 533FSB/512KB	Prestonia, C1 stepping, FC-mPGAS2P/INT-m PGA,
Xeon 2.66GHz/533FSB/512KB	
Xeon 2.4GHz/533FSB/512KB	
Xeon 2.0GHz/533FSB/512KB	
Xeon 2.8GHz/400FSB/512KB	
Xeon 2.4GHz/400FSB/512KB	
Xeon 2.0GHz/400FSB/512KB	
Xeon 1.8GHz/400FSB/512KB	
DDR module (with ECC)	
1GB PC2100 DDR registered	Infineon DDR 64x4x36, (128x4x18 stacked) CL2, 1.2" HYB25D256400 BT-7/HYS72D128521GR-7-B
	Apacer DDR 64x4x36, (128x4x18 stacked) CL2, 1.2" Infineon HYB25D256400 BT-7
512MB PC2100 DDR registered	Infineon DDR 64x4x18 CL2, 1.2" HYB25D256400 BT-7/HYS72D64500GR-7-B
	Apacer DDR 64x4x18 CL2, 1.2" HYB25D256400 BT-7
256MB PC2100 DDR registered	Infineon DDR 32x8x9 CL2, 1.2" HYB25D256800 BT-7/HYS72D32500GR-7-B
	Apacer DDR 32x8x9 CL2, 1.2" Infineon HYB25D256800 BT-7
128MB PC2100 DDR registered	Apacer DDR 16x8x9 CL2 Infineon HYB25D128800 AT-7
SCSI RAID card	
ASRC/1Q 4ch Ultra160 RAID card, PCI	LSI Enterprise 1600, 64bit/66MHz Q12160A, i960RN 64/66, Battery Backup Unit & 128MB SDRAM f/w C170, W2K driver 5.25, Acer Altos CD 4.0
ASRC/1D 2ch Ultra160 RAID card, PC	LSI Elite 1600 64MB SDRAM, 64bit/66MHz PCI, i960RN, f/w C170, Acer Altos CD 4.0, W2k driver 5.25
	LSI Elite 1600 128MB with Battery back up, 64bit/66MHz PCI, i960RN, f/w C170, Acer Altos CD 4.0, W2k driver 5.25
ASRC/1S 1ch Ultra160 RAID card, PCI	LSI Express500 32/33Mhz PCI, i960RM-100, 32MB SDRAM, f/w C170, W2k driver 5.25, Acer Altos CD4.0
SCSI Card	
ASC/1D 2ch U160 SCSI card	U160 53C1010R 2ch, 64bit/66Mhz PCI-2.2 BIOS 4.19 with 7conn U160 SCSI cable/terminator, w/o SDMS CD4.8 for Altos
ASC/1S 1ch U160 SCSI card	U160 53C1000R 1ch, 64/66Mhz PCI-2.2, BIOS 4.19 with 7 conn U160 SCSI cable/terminator, w/o SDMS CD4.8 for Altos

Items	Specifications
SCSI Hard Drive (80 pin)	
146GB, U320, 10K RPM	Seagate Cheetah 146LP ST3146807LC f/w 0003
	IBM Daytona146Z10 IC35L146UCDY10, f/w S23C
73GB, U320, 10K RPM	Seagate Cheetah 146LP ST373307LC f/w 0003
	IBM Daytona146Z10 IC35L073UCDY10, f/w S23C
36GB, U320, 10K RPM	Seagate Cheetah 146LP ST336607LC f/w 0003
	IBM Daytona146Z10 IC35L036UCDY10, f/w S23C
18GB, U320, 10K RPM	IBM Daytona146Z10 IC35L018UCDY10, f/w S23C
SCSI Hard Drive (68 pin)	
146GB, U320, 10K RPM	Seagate Cheetah 146LP ST3146807LW f/w 0003
	IBM Daytona146Z10 IC35L146UWDY10, f/w S23C
73GB, U320, 10K RPM	Seagate Cheetah 146LP ST373307LW f/w 0003
	IBM Daytona146Z10 IC35L073UWDY10, f/w S23C
36GB, U320, 10K RPM	Seagate Cheetah 146LP ST336607LW f/w 0003
	IBM Daytona146Z10 IC35L036UWDY10, f/w S23C
18G, U320, 10K RPM	IBM Daytona146Z10 IC35L018UWDY10, f/w S23C
ATA Hard Drive	
120GB, ATA100 7200RPM	Seagate Cuda V "Avalanche" ST3120023A f/w 3.31
80GB, ATA100 7200RPM	Seagate Cuda V "Avalanche" ST380023A f/w 3.31
60GB, ATA100 7200RPM	Seagate Cuda V "Avalanche" ST360015A f/w 3.31
Redundant Power Supply	
Altos G700/510 redundant SPS	SPS 450W DELTA DPS450FBA Power Supply Unit

Netware 6.0 Environment Test

Items	Specifications
CPU	
Xeon 2.8GHz/ 533FSB/512KB	Prestonia, C1 stepping, FC-mPGAS2P/INT-m PGA,
Xeon 2.66GHz/533FSB/512KB	
Xeon 2.4GHz/533FSB/512KB	
Xeon 2.0GHz/533FSB/512KB	
Xeon 2.8GHz/400FSB/512KB	
Xeon 2.4GHz/400FSB/512KB	
Xeon 2.0GHz/400FSB/512KB	
Xeon 1.8GHz/400FSB/512KB	
DDR module (with ECC)	
1GB PC2100 DDR registered	Infineon DDR 64x4x36, (128x4x18 stacked) CL2, 1.2" HYB25D256400 BT-7/HYS72D128521GR-7-B
	Apacer DDR 64x4x36, (128x4x18 stacked) CL2, 1.2" Infineon HYB25D256400 BT-7
512MB PC2100 DDR registered	Infineon DDR 64x4x18 CL2, 1.2" HYB25D256400 BT-7/HYS72D64500GR-7-B
	Apacer DDR 64x4x18 CL2, 1.2" HYB25D256400 BT-7
256MB PC2100 DDR registered	Infineon DDR 32x8x9 CL2, 1.2" HYB25D256800 BT-7/HYS72D32500GR-7-B
	Apacer DDR 32x8x9 CL2, 1.2" Infineon HYB25D256800 BT-7
128MB PC2100 DDR registered	Apacer DDR 16x8x9 CL2 Infineon HYB25D128800 AT-7
SCSI RAID card	
ASRC/1Q 4ch Ultra160 RAID card, PCI	LSI Enterprise 1600, 64bit/66MHz Q12160A, i960RN 64/66, Battery Backup Unit & 128MB SDRAM f/w C170, W2K driver 5.25, Acer Altos CD 4.0
ASRC/1D 2ch Ultra160 RAID card, PC	LSI Elite 1600 64MB SDRAM, 64bit/66MHz PCI, i960RN, f/w C170, Acer Altos CD 4.0, W2k driver 5.25
	LSI Elite 1600 128MB with Battery back up, 64bit/66MHz PCI, i960RN, f/w C170, Acer Altos CD 4.0, W2k driver 5.25
ASRC/1S 1ch Ultra160 RAID card, PCI	LSI Express500 32/33Mhz PCI, i960RM-100, 32MB SDRAM, f/w C170, W2k driver 5.25, Acer Altos CD4.0
SCSI Card	
ASC/1D 2ch U160 SCSI card	U160 53C1010R 2ch, 64bit/66Mhz PCI-2.2 BIOS 4.19 with 7conn U160 SCSI cable/terminator, w/o SDMS CD4.8 for Altos
ASC/1S 1ch U160 SCSI card	U160 53C1000R 1ch, 64/66Mhz PCI-2.2, BIOS 4.19 with 7 conn U160 SCSI cable/terminator, w/o SDMS CD4.8 for Altos

Items	Specifications
SCSI Hard Drive (80 pin)	
146GB, U320, 10K RPM	Seagate Cheetah 146LP ST3146807LC f/w 0003
	IBM Daytona146Z10 IC35L146UCDY10, f/w S23C
73GB, U320, 10K RPM	Seagate Cheetah 146LP ST373307LC f/w 0003
	IBM Daytona146Z10 IC35L073UCDY10, f/w S23C
36GB, U320, 10K RPM	Seagate Cheetah 146LP ST336607LC f/w 0003
	IBM Daytona146Z10 IC35L036UCDY10, f/w S23C
18GB, U320, 10K RPM	IBM Daytona146Z10 IC35L018UCDY10, f/w S23C
SCSI Hard Drive (68 pin)	
146GB, U320, 10K RPM	Seagate Cheetah 146LP ST3146807LW f/w 0003
	IBM Daytona146Z10 IC35L146UWDY10, f/w S23C
73GB, U320, 10K RPM	Seagate Cheetah 146LP ST373307LW f/w 0003
	IBM Daytona146Z10 IC35L073UWDY10, f/w S23C
36GB, U320, 10K RPM	Seagate Cheetah 146LP ST336607LW f/w 0003
	IBM Daytona146Z10 IC35L036UWDY10, f/w S23C
18G, U320, 10K RPM	IBM Daytona146Z10 IC35L018UWDY10, f/w S23C
ATA Hard Drive	
120GB, ATA100 7200RPM	Seagate Cuda V "Avalanche" ST3120023A f/w 3.31
80GB, ATA100 7200RPM	Seagate Cuda V "Avalanche" ST380023A f/w 3.31
60GB, ATA100 7200RPM	Seagate Cuda V "Avalanche" ST360015A f/w 3.31
Redundant Power Supply	
Altos G700/510 redundant SPS	SPS 450W DELTA DPS450FBA Power Supply Unit

Unixware 7.1.1 Environment Test

Items	Specifications
CPU	
Xeon 2.8GHz/ 533FSB/512KB	Prestonia, C1 stepping, FC-mPGAS2P/INT-m PGA,
Xeon 2.66GHz/533FSB/512KB	
Xeon 2.4GHz/533FSB/512KB	
Xeon 2.0GHz/533FSB/512KB	
Xeon 2.8GHz/400FSB/512KB	
Xeon 2.4GHz/400FSB/512KB	
Xeon 2.0GHz/400FSB/512KB	
Xeon 1.8GHz/400FSB/512KB	
DDR module (with ECC)	
1GB PC2100 DDR registered	Infineon DDR 64x4x36, (128x4x18 stacked) CL2, 1.2" HYB25D256400 BT-7/HYS72D128521GR-7-B
	Apacer DDR 64x4x36, (128x4x18 stacked) CL2, 1.2" Infineon HYB25D256400 BT-7
512MB PC2100 DDR registered	Infineon DDR 64x4x18 CL2, 1.2" HYB25D256400 BT-7/HYS72D64500GR-7-B
	Apacer DDR 64x4x18 CL2, 1.2" HYB25D256400 BT-7
256MB PC2100 DDR registered	Infineon DDR 32x8x9 CL2, 1.2" HYB25D256800 BT-7/HYS72D32500GR-7-B
	Apacer DDR 32x8x9 CL2, 1.2" Infineon HYB25D256800 BT-7
128MB PC2100 DDR registered	Apacer DDR 16x8x9 CL2 Infineon HYB25D128800 AT-7
SCSI RAID card	
ASRC/1Q 4ch Ultra160 RAID card, PCI	LSI Enterprise 1600, 64bit/66MHz Q12160A, i960RN 64/66, Battery Backup Unit & 128MB SDRAM f/w C170, W2K driver 5.25, Acer Altos CD 4.0
ASRC/1D 2ch Ultra160 RAID card, PC	LSI Elite 1600 64MB SDRAM, 64bit/66MHz PCI, i960RN, f/w C170, Acer Altos CD 4.0, W2k driver 5.25
	LSI Elite 1600 128MB with Battery back up, 64bit/66MHz PCI, i960RN, f/w C170, Acer Altos CD 4.0, W2k driver 5.25
ASRC/1S 1ch Ultra160 RAID card, PCI	LSI Express500 32/33Mhz PCI, i960RM-100, 32MB SDRAM, f/w C170, W2k driver 5.25, Acer Altos CD4.0
SCSI Card	
ASC/1D 2ch U160 SCSI card	U160 53C1010R 2ch, 64bit/66Mhz PCI-2.2 BIOS 4.19 with 7conn U160 SCSI cable/terminator, w/o SDMS CD4.8 for Altos
ASC/1S 1ch U160 SCSI card	U160 53C1000R 1ch, 64/66Mhz PCI-2.2, BIOS 4.19 with 7 conn U160 SCSI cable/terminator, w/o SDMS CD4.8 for Altos

Items	Specifications
SCSI Hard Drive (80 pin)	
146GB, U320, 10K RPM	Seagate Cheetah 146LP ST3146807LC f/w 0003
	IBM Daytona146Z10 IC35L146UCDY10, f/w S23C
73GB, U320, 10K RPM	Seagate Cheetah 146LP ST373307LC f/w 0003
	IBM Daytona146Z10 IC35L073UCDY10, f/w S23C
36GB, U320, 10K RPM	Seagate Cheetah 146LP ST336607LC f/w 0003
	IBM Daytona146Z10 IC35L036UCDY10, f/w S23C
18GB, U320, 10K RPM	IBM Daytona146Z10 IC35L018UCDY10, f/w S23C
SCSI Hard Drive (68 pin)	
146GB, U320, 10K RPM	Seagate Cheetah 146LP ST3146807LW f/w 0003
	IBM Daytona146Z10 IC35L146UWDY10, f/w S23C
73GB, U320, 10K RPM	Seagate Cheetah 146LP ST373307LW f/w 0003
	IBM Daytona146Z10 IC35L073UWDY10, f/w S23C
36GB, U320, 10K RPM	Seagate Cheetah 146LP ST336607LW f/w 0003
	IBM Daytona146Z10 IC35L036UWDY10, f/w S23C
18G, U320, 10K RPM	IBM Daytona146Z10 IC35L018UWDY10, f/w S23C
ATA Hard Drive	
120GB, ATA100 7200RPM	Seagate Cuda V "Avalanche" ST3120023A f/w 3.31
80GB, ATA100 7200RPM	Seagate Cuda V "Avalanche" ST380023A f/w 3.31
60GB, ATA100 7200RPM	Seagate Cuda V "Avalanche" ST360015A f/w 3.31
Redundant Power Supply	
Altos G700/510 redundant SPS	SPS 450W DELTA DPS450FBA Power Supply Unit

OpenServer 5.0.6 Environment Test

Items	Specifications
CPU	
Xeon 2.8GHz/ 533FSB/512KB	Prestonia, C1 stepping, FC-mPGAS2P/INT-m PGA,
Xeon 2.66GHz/533FSB/512KB	
Xeon 2.4GHz/533FSB/512KB	
Xeon 2.0GHz/533FSB/512KB	
Xeon 2.8GHz/400FSB/512KB	
Xeon 2.4GHz/400FSB/512KB	
Xeon 2.0GHz/400FSB/512KB	
Xeon 1.8GHz/400FSB/512KB	
DDR module (with ECC)	
1GB PC2100 DDR registered	Infineon DDR 64x4x36, (128x4x18 stacked) CL2, 1.2" HYB25D256400 BT-7/HYS72D128521GR-7-B
	Apacer DDR 64x4x36, (128x4x18 stacked) CL2, 1.2" Infineon HYB25D256400 BT-7
512MB PC2100 DDR registered	Infineon DDR 64x4x18 CL2, 1.2" HYB25D256400 BT-7/HYS72D64500GR-7-B
	Apacer DDR 64x4x18 CL2, 1.2" HYB25D256400 BT-7
256MB PC2100 DDR registered	Infineon DDR 32x8x9 CL2, 1.2" HYB25D256800 BT-7/HYS72D32500GR-7-B
	Apacer DDR 32x8x9 CL2, 1.2" Infineon HYB25D256800 BT-7
128MB PC2100 DDR registered	Apacer DDR 16x8x9 CL2 Infineon HYB25D128800 AT-7
SCSI RAID card	
ASRC/1Q 4ch Ultra160 RAID card, PCI	LSI Enterprise 1600, 64bit/66MHz Q12160A, i960RN 64/66, Battery Backup Unit & 128MB SDRAM f/w C170, W2K driver 5.25, Acer Altos CD 4.0
ASRC/1D 2ch Ultra160 RAID card, PC	LSI Elite 1600 64MB SDRAM, 64bit/66MHz PCI, i960RN, f/w C170, Acer Altos CD 4.0, W2k driver 5.25
	LSI Elite 1600 128MB with Battery back up, 64bit/66MHz PCI, i960RN, f/w C170, Acer Altos CD 4.0, W2k driver 5.25
ASRC/1S 1ch Ultra160 RAID card, PCI	LSI Express500 32/33Mhz PCI, i960RM-100, 32MB SDRAM, f/w C170, W2k driver 5.25, Acer Altos CD4.0
SCSI Card	
ASC/1D 2ch U160 SCSI card	U160 53C1010R 2ch, 64bit/66Mhz PCI-2.2 BIOS 4.19 with 7conn U160 SCSI cable/terminator, w/o SDMS CD4.8 for Altos
ASC/1S 1ch U160 SCSI card	U160 53C1000R 1ch, 64/66Mhz PCI-2.2, BIOS 4.19 with 7 conn U160 SCSI cable/terminator, w/o SDMS CD4.8 for Altos

Items	Specifications
SCSI Hard Drive (80 pin)	
146GB, U320, 10K RPM	Seagate Cheetah 146LP ST3146807LC f/w 0003
	IBM Daytona146Z10 IC35L146UCDY10, f/w S23C
73GB, U320, 10K RPM	Seagate Cheetah 146LP ST373307LC f/w 0003
	IBM Daytona146Z10 IC35L073UCDY10, f/w S23C
36GB, U320, 10K RPM	Seagate Cheetah 146LP ST336607LC f/w 0003
	IBM Daytona146Z10 IC35L036UCDY10, f/w S23C
18GB, U320, 10K RPM	IBM Daytona146Z10 IC35L018UCDY10, f/w S23C
SCSI Hard Drive (68 pin)	
146GB, U320, 10K RPM	Seagate Cheetah 146LP ST3146807LW f/w 0003
	IBM Daytona146Z10 IC35L146UWDY10, f/w S23C
73GB, U320, 10K RPM	Seagate Cheetah 146LP ST373307LW f/w 0003
	IBM Daytona146Z10 IC35L073UWDY10, f/w S23C
36GB, U320, 10K RPM	Seagate Cheetah 146LP ST336607LW f/w 0003
	IBM Daytona146Z10 IC35L036UWDY10, f/w S23C
18G, U320, 10K RPM	IBM Daytona146Z10 IC35L018UWDY10, f/w S23C
ATA Hard Drive	
120GB, ATA100 7200RPM	Seagate Cuda V "Avalanche" ST3120023A f/w 3.31
80GB, ATA100 7200RPM	Seagate Cuda V "Avalanche" ST380023A f/w 3.31
60GB, ATA100 7200RPM	Seagate Cuda V "Avalanche" ST360015A f/w 3.31
Redundant Power Supply	
Altos G700/510 redundant SPS	SPS 450W DELTA DPS450FBA Power Supply Unit

Windows NT4.0 Environment Test

Items	Specifications
CPU	
Xeon 2.8GHz/ 533FSB/512KB	Prestonia, C1 stepping, FC-mPGAS2P/INT-m PGA,
Xeon 2.66GHz/533FSB/512KB	
Xeon 2.4GHz/533FSB/512KB	
Xeon 2.0GHz/533FSB/512KB	
Xeon 2.8GHz/400FSB/512KB	
Xeon 2.4GHz/400FSB/512KB	
Xeon 2.0GHz/400FSB/512KB	
Xeon 1.8GHz/400FSB/512KB	
DDR module (with ECC)	
1GB PC2100 DDR registered	Infineon DDR 64x4x36, (128x4x18 stacked) CL2, 1.2" HYB25D256400 BT-7/HYS72D128521GR-7-B
	Apacer DDR 64x4x36, (128x4x18 stacked) CL2, 1.2" Infineon HYB25D256400 BT-7
512MB PC2100 DDR registered	Infineon DDR 64x4x18 CL2, 1.2" HYB25D256400 BT-7/HYS72D64500GR-7-B
	Apacer DDR 64x4x18 CL2, 1.2" HYB25D256400 BT-7
256MB PC2100 DDR registered	Infineon DDR 32x8x9 CL2, 1.2" HYB25D256800 BT-7/HYS72D32500GR-7-B
	Apacer DDR 32x8x9 CL2, 1.2" Infineon HYB25D256800 BT-7
128MB PC2100 DDR registered	Apacer DDR 16x8x9 CL2 Infineon HYB25D128800 AT-7
SCSI RAID card	
ASRC/1Q 4ch Ultra160 RAID card, PCI	LSI Enterprise 1600, 64bit/66MHz Q12160A, i960RN 64/66, Battery Backup Unit & 128MB SDRAM f/w C170, W2K driver 5.25, Acer Altos CD 4.0
ASRC/1D 2ch Ultra160 RAID card, PC	LSI Elite 1600 64MB SDRAM, 64bit/66MHz PCI, i960RN, f/w C170, Acer Altos CD 4.0, W2k driver 5.25
	LSI Elite 1600 128MB with Battery back up, 64bit/66MHz PCI, i960RN, f/w C170, Acer Altos CD 4.0, W2k driver 5.25
ASRC/1S 1ch Ultra160 RAID card, PCI	LSI Express500 32/33Mhz PCI, i960RM-100, 32MB SDRAM, f/w C170, W2k driver 5.25, Acer Altos CD4.0
SCSI Card	
ASC/1D 2ch U160 SCSI card	U160 53C1010R 2ch, 64bit/66Mhz PCI-2.2 BIOS 4.19 with 7conn U160 SCSI cable/terminator, w/o SDMS CD4.8 for Altos
ASC/1S 1ch U160 SCSI card	U160 53C1000R 1ch, 64/66Mhz PCI-2.2, BIOS 4.19 with 7 conn U160 SCSI cable/terminator, w/o SDMS CD4.8 for Altos

Items	Specifications
SCSI Hard Drive (80 pin)	
146GB, U320, 10K RPM	Seagate Cheetah 146LP ST3146807LC f/w 0003
	IBM Daytona146Z10 IC35L146UCDY10, f/w S23C
73GB, U320, 10K RPM	Seagate Cheetah 146LP ST373307LC f/w 0003
	IBM Daytona146Z10 IC35L073UCDY10, f/w S23C
36GB, U320, 10K RPM	Seagate Cheetah 146LP ST336607LC f/w 0003
	IBM Daytona146Z10 IC35L036UCDY10, f/w S23C
18GB, U320, 10K RPM	IBM Daytona146Z10 IC35L018UCDY10, f/w S23C
SCSI Hard Drive (68 pin)	
146GB, U320, 10K RPM	Seagate Cheetah 146LP ST3146807LW f/w 0003
	IBM Daytona146Z10 IC35L146UWDY10, f/w S23C
73GB, U320, 10K RPM	Seagate Cheetah 146LP ST373307LW f/w 0003
	IBM Daytona146Z10 IC35L073UWDY10, f/w S23C
36GB, U320, 10K RPM	Seagate Cheetah 146LP ST336607LW f/w 0003
	IBM Daytona146Z10 IC35L036UWDY10, f/w S23C
18G, U320, 10K RPM	IBM Daytona146Z10 IC35L018UWDY10, f/w S23C
ATA Hard Drive	
120GB, ATA100 7200RPM	Seagate Cuda V "Avalanche" ST3120023A f/w 3.31
80GB, ATA100 7200RPM	Seagate Cuda V "Avalanche" ST380023A f/w 3.31
60GB, ATA100 7200RPM	Seagate Cuda V "Avalanche" ST360015A f/w 3.31
Redundant Power Supply	
Altos G700/510 redundant SPS	SPS 450W DELTA DPS450FBA Power Supply Unit

Online Support Information

This section describes online technical support services available to help you repair your Acer Systems.

If you are a distributor, dealer, ASP or TPM, please refer your technical queries to your local Acer branch office. Acer Branch Offices and Regional Business Units may access our website. However some information sources will require a user i.d. and password. These can be obtained directly from Acer CSD Taiwan.

Acer's Website offers you convenient and valuable support resources whenever you need them.

In the Technical Information section you can download information on all of Acer's Notebook, Desktop and Server models including:

- Service guides
- User's manuals
- Training materials
- Bios updates
- Spare parts lists
- TABs (Technical Announcement Bulletin)

For these purposes, we have included an Acrobat File to facilitate the problem-free downloading of our technical material.

Also contained on this website are:

- Detailed information on Acer's International Traveler's Warranty (ITW)
- Returned material authorization procedures
- An overview of all the support services we offer, accompanied by a list of telephone, fax and email contacts for all your technical queries.

We are always looking for ways to optimize and improve our services, so if you have any suggestions or comments, please do not hesitate to communicate these to us.